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RD-TM-72-5

EXPERIMENTAL AERODYNAMIC INVESTIGATIONS OF CONFIGURATION SHAPE FOR RING TAIL MISSILES AT MACH NUMBERS FROM 0.5 TO 1.3

C. Wayne Dahlke, AMSMI

J.C. Craft, AMSMI

March 1972

Approved for Public Release, Distribution Unlimited

U.S. ARMY MISSILE COMMAND
Redstone Arsenal, Alabama

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U.S. ARMY MISSILE COMMAND

WIND TUNNEL TEST DATA REPORT

CONFIGURATION: LONGITUDINALLY SUPPORTED RING TAIL MISSILE

TEST PURPOSE: Parametric Investigations of Missile Configuration

TEST FACILITY: AEDC 4-Foot Transonic (4T) Wind Tunnel

TESTING AGENCY: Army Missile Command

TEST NO. & DATE: AEDC/TC-201, January, 1972

TEST CONDUCTOR(S): C. Wayne Dahlke, J. C. Craft

DATA MANAGEMENT SERVICES

LIAISON: John E. Vaughn DATA OPERATIONS:
John E. Vaughn

RELEASE APPROVAL:
N. D. Kemp, Supervisor
Aero Thermo Data Group

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EXPERIMENTAL AERODYNAMIC INVESTIGATIONS OF CONFIGURATION SHAPE FOR RING TAIL MISSILES AT MACH NUMBERS FROM 0.5 TO 1.3

By C. Wayne Dahlke & J. C. Craft

ABSTRACT

Experimental aerodynamic investigations were conducted during January, 1972 at the AEDC PWT 4T wind tunnel on approximately 20 different configurations of ring tail missiles. The more important geometric parameters considered were ring tail support strut length, strut start position, and ring tail to center-body diameter ratio. Six component aerodynamic force and moment data were recorded over an angle of attack range from -6^{o} to 6^{o} at Mach numbers ranging from 0.5 to 1.3.

NOMENCLATURE
General

SYMBOL	SADSAC SYMBOL	DEFINITION
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_1 - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2, psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m^2, psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3, $slugs/ft^3$
		Reference & C.G. Definitions
A_b		base area; m^2, ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
ℓ_{REF} or $\bar{c}$	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2, ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

Body-Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base axial-force coefficient; $\frac{\text{base axial force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient; $C_A - C_{A_b}$
C_m	CIM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$

INTRODUCTION

The military services continue to be interested in tube launched missiles. This method of launch rules out large fixed protuberances, such as fins on the missile which are necessary for flight stabilization. One method utilized to aerodynamically stabilize missile shapes without protuberances and which is adaptable to tube launch is the adaptation of a longitudinally supported ring tail (LSRT).

There have been several wind tunnel investigations made in the past on missiles of this type, but they were directed toward system development studies or single parameter variations. There has not been an approach taken to study the various parameters with a single configuration buildup.

The test described herein was designed to provide data for several of the variables that may be considered during the design of a longitudinally supported ring tail missile. Some of these variables are: ring tail support strut length; centerbody loads; centerbody/ring diameter ratio: ring chord length and nose shape.

The basic model configuration was selected from typical tube launched missile designs which from a review study revealed that warheads generally had length to maximum diameter ratios of 3.5 to 4.0. The fore section is typically a blunted 10-15 degree half-angle cone with the aft section of the nose being conical or ogival. When the cones are used the mid section is typically a cylinder followed by a conical boattail with a half angle about the same as the fore section. Figures 1 and 2 are photographs of typical test models installed in the tunnel.

CONFIGURATIONS INVESTIGATED

This investigation utilized one nose section, N_1; four solid sleeves (mid sections), M_1, M_2, M_3 and M_4; six combinations of solid sleeve and ring tail, R_1, R_2, R_3, R_4, R_5 and R_6; five centerbodies, C_1, C_2, C_3, C_4 and C_5; and one boattail, B_1. The Data Set Collation Sheets (Table II) list the various combinations the components were tested in. Figure 3 shows the detail dimensions of the nose and boattail. Figure 4 depicts the solid sleeves. Figure 5 shows the sleeve and ring tail critical dimensions and Figure 6 delineates the centerbody dimensions. Figure 7 parametrically displays the various complete configurations investigated.

TEST FACILITY DESCRIPTION

The AEDC-PWT Aerodynamic Wind Tunnel (4T) is a closed loop, continuous flow, variable density tunnel in which the Mach number can be varied from 0.2 to 1.3. At all Mach numbers, the stagnation pressure can be varied from 200 to 3400 psfa. The test section is 4 feet square and 12.5 feet long with perforated variable porosity (0.5 to 10 percent open) walls. It is completely enclosed in a plenum chamber from which air can be evacuated allowing part of the tunnel airflow to be removed thru the perforated walls of the test section. A more thorough description of the tunnel may be found in Test Facilities Handbook (Ninth Edition) "Propulsion Wind Tunnel Facility, Vol 4," Arnold Engineering Development Center, July 1971.

REDUCTION OF DATA

The six component aerodynamic forces and moments measured by the internal strain gage balance have been reduced to coefficient form in the body prime axis system using the following reference dimensions: (See figure 8.)

S_{REF} = body maximum cross sectional area = 7.068 in^2

$D = \ell_{REF} = b_{REF}$ = body maximum diameter = 3.0 inches

Moments are referenced to the missile nose (station 0.0). The body prime axis system maintains the normal force and pitching moment in the pitch plane regardless of model attitude. When the model roll angle is zero the body axis system and the body prime axis system are coincident. For other roll conditions:

$$C_{N_P} = C_N \cos \phi - C_y \sin \phi$$

$$C_{Y_P} = C_Y \cos \phi + C_N \sin \phi$$

$$CLM_P = C_{N_P} (X/\ell_{REF})$$

$$CYN_P = C_{Y_P} (X/b_{REF})$$

The longitudinal center of pressures (XCP) are presented as a percent of body diameter (XCP/D) with negative direction being aft of the nose; (i.e. a positive normal force gives a negative pitching moment about the missile nose). They were calculated by the equation:

$$XCP/D = C_{m_\alpha}/C_{N_\alpha}$$

with the gradients being determined between ± 1.25 degrees angle of attack.

Table I gives an estimate of the data accuracy.

TABLE I.

DATA PRECISION

M_∞	C_N	C_M	C_A
0.50	$\pm$0.010	$\pm$0.040	$\pm$0.020
0.80	$\pm$0.006	$\pm$0.023	$\pm$0.012
0.95	$\pm$0.005	$\pm$0.021	$\pm$0.011
1.00	$\pm$0.005	$\pm$0.020	$\pm$0.010
1.05	$\pm$0.005	$\pm$0.019	$\pm$0.010
1.10	$\pm$0.005	$\pm$0.019	$\pm$0.010
1.20	$\pm$0.005	$\pm$0.018	$\pm$0.010
1.30	$\pm$0.005	$\pm$0.018	$\pm$0.009

TEST PWT-AT-201 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES ϕ	PARAMETERS/VALUES M_{ETA}	PARAMETERS/VALUES E_{TA}	PARAMETERS/VALUES C_{ID}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.3	0.5	0.8	0.95	1.00	1.05	1.10	1.20	1.30	TEST RUN NUMBERS
RTAM01	N1 M1	A	O	O	2.25					27	28	29	30	31	32	33	34	
02	N1 M2				1.50					15	16	17	18	19	20	21	22	
03	N1 M3				0.75					2	3	4	5	6	7	8	9	
04	N1 M4				5.75					38	39	40	41	42	43	44	45	
05	N1 M1 C1				2.25	5.0	0.4			135	136	137	138	139	140	141	142	
06	N1 M2 C1				1.50					147	148	149	150	151	152	153	154	
07	N1 M3 C1				0.75					158	159	160	161	162	163	163	164	
08	N1 M2 B1 C1				1.50		0.4			169	170	171	175	176	177	178	179	
10	N1 M2 C2						0.5			194	195	196	197		198	199	200	
11	N1 M2 C3						0.67			224	225	226	227		228	229	230	
12	N1 M2 C5					5.0	0.40			108	109	110	111	112	113	114	115	
RTAM 13	N1 M1 C4	A	O	O	2.25	6.50	0.50			285	286	287	288		289	290	291	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

C... CA... CAE... CAB... CLM... CY... CYN... CBL... XCP... BETA... MACH... ALPHA... ID

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES: XA: ±6, ±5, ±4, ±3 ±2, ±1.5, ±1.0, ±0.75 ±0.50, ±0.25, 0

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TEST PWT-47-201 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

8

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES Ø	PARAMETERS/VALUES	PARAMETERS/VALUES	PARAMETERS/VALUES	R WIDTH	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) C LENGTH	C DIA.	0.3	0.5	0.8	0.95	1.0	1.05	1.10	1.20	1.30
RTAR01	N1R1	A	0	0	2.25	2.5	.20	1.0				49	50	51	52	53	54	55	56
02	N1R2		0	0	1.50	3.25					60	61	62	63	64	65	66	67	68
03			B	22.5									70		75			77	
04			B	45.0									71		74			81	
05	N1R2		0	180.0	1.50								72		73			80	
06	N1R3			0	0.75	4.0						86	87	88	89	90	91	92	93
07	N1R4				2.25	3.0						97	98	99	100	101	102	103	104
08	N1R1C2				2.25	2.5			5.0	.50			217		220		218	219	
09	N1R2C1				1.5	3.25				.40		183	184	185	186	187	188	189	190
13	N1R4C1				2.25	3.0	.20			.40				256	257		259	260	261
14	N1R5C1				2.25	3.5	.40			.50		244	245	246	247		248	249	250
17	N1R6C2				2.25	4.0	.70					296	297	298			299	300	301
18	N1R2C2		0		1.50	3.25						204	205	207	208		210	211	213
19	N1R2C2		B							.50			206		209			212	
20	N1R2C3		0						5.0	.67		234	235	236	237		238	239	240
21	N1R2C4				1.50	3.25			6.5	.50		274	275	276	277		278	279	280
23	N1R6C4				2.25	4.0			6.5	.50		265	266	267	268		269		
25	N1R2C5		0	0	1.50	3.25			5.0	.40		119	120	123	124	127	128	129	132
26	N1R2C5		B										121		125			130	
RTAR27	N1R2C5	A	B	90	1.50	3.25	.20	1.0	5.0	.40			122		126			131	

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS: $\alpha = \pm 6, \pm 5, \pm 4, \pm 3, \pm 2, \pm 1.5, \pm 1.0, \pm 0.75, \pm 0.50, \pm 0.25, 0$

α or β SCHEDULES

β = VARIABLE WITH α

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TABLE III. INDEX OF MODEL FIGURES

Figure	Title	Page
1	Model $N_1M_2B_1C_1$ Installed in AEDC-PWT 4T Wind Tunnel	12
2	Model $N_1R_1C_2$ Installed in AEDC-PWT 4T Wind Tunnel	13
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Effect of Afterbody Length and Centerbody	C	Configuration	123-126
Effect of Strut Length	C	Configuration	127-128
Effect of Strut Length with Centerbody	C	Configuration	129-130
Effect of Strut Length and Centerbody Diameter	C	Configuration	131-132
Effect of Strut Length and Centerbody Length	C	Configuration	133-134
Effect of Strut Width	C	Configuration	135-136
Loads on Centerbody (with Ring)	C	Configuration	137-138
Effect of Aspect Ratio	C	Configuration	139-140
Effect of Aspect Ratio and Centerbody Diameter	C	Configuration	141-142
Effect of Boattail	C	Configuration	143-144
Effect of Model Roll Angle	C	Roll Angle	145-152

Plot Schedules:

A) C_N, C_m vs. α

B) C_{N_α}, C_{m_α}, XCP/D, $(C_A)_{\alpha=0}$, $(C_{A_F})_{\alpha=0}$ vs. Mach number

C) C_{N_α}, C_{m_α}, XCP/D, $(C_A)_{\alpha=0}$ vs. Mach number

MODEL FIGURES

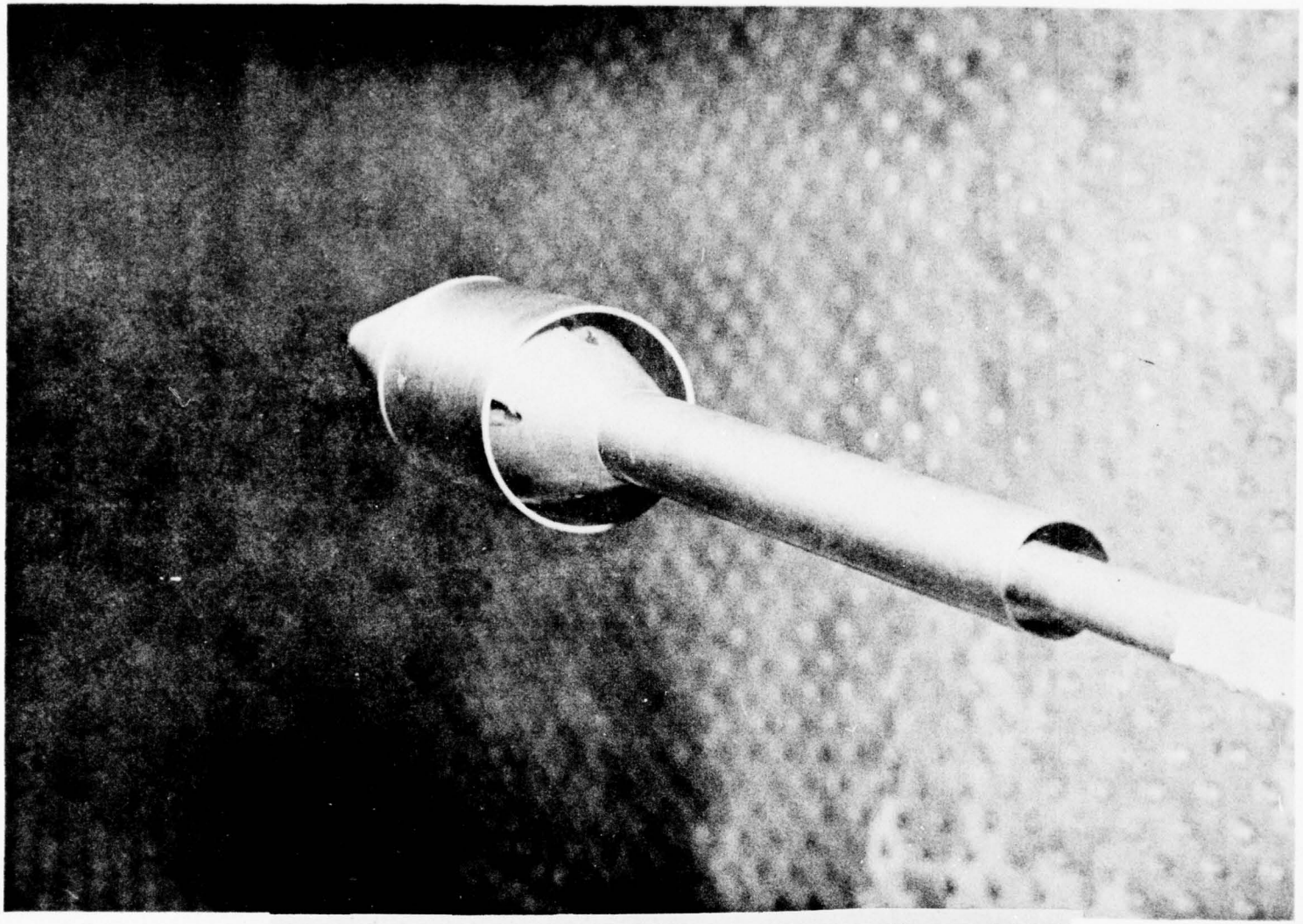


FIGURE 1. MODEL $N_1M_2B_1C_1$ INSTALLED IN AEDC-PWT 4T WIND TUNNEL

1-3-72) PC0210 AFATL AERODYNAMIC STUDY OF MODIFIED RING TAIL TEST

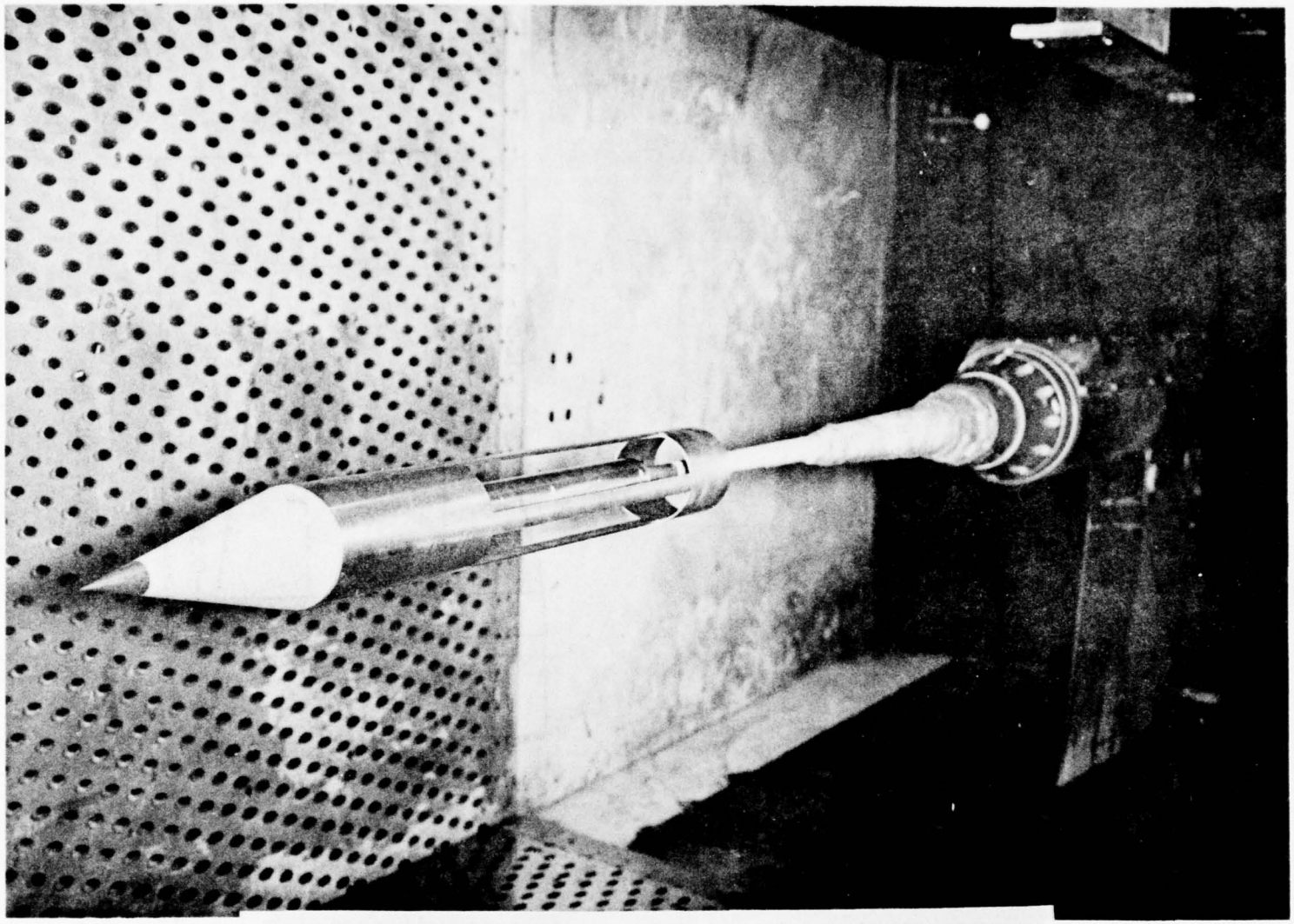
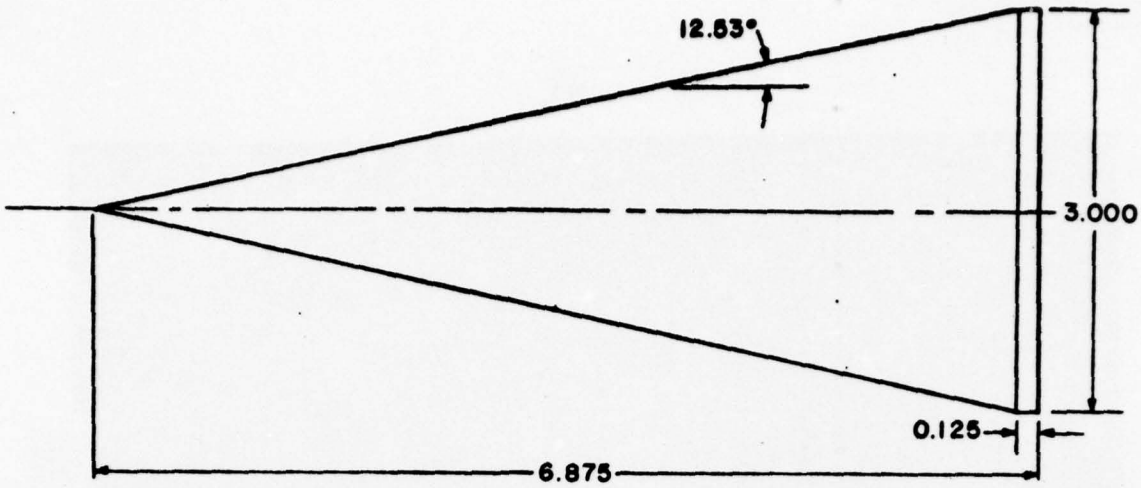
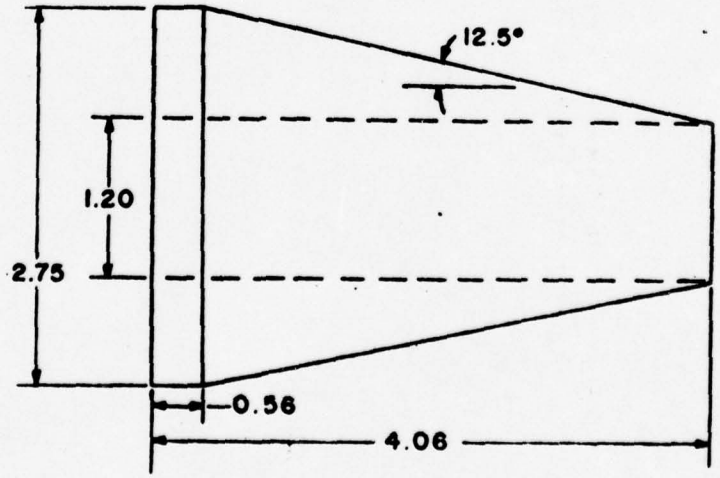


FIGURE 2. MODEL $N_1R_1C_2$ INSTALLED IN AEDC-PWT 4T WIND TUNNEL

41 (1-4-72) PC0210



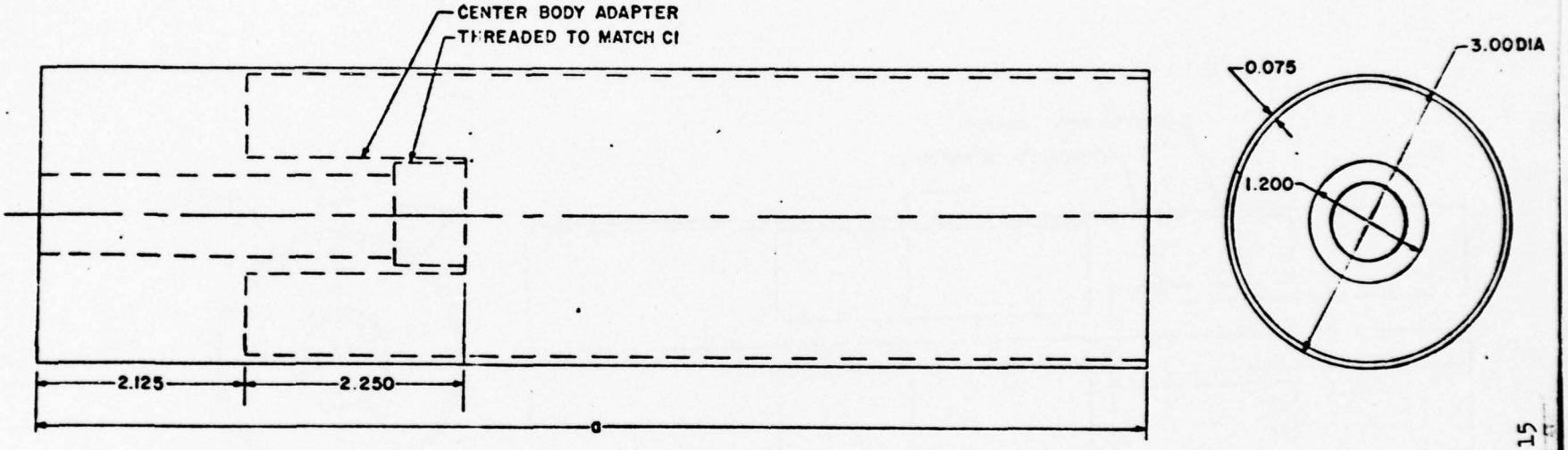
NOSE ASSEMBLY (N1)



BOATTAIL (B1)

ALL DIMENSIONS IN INCHES

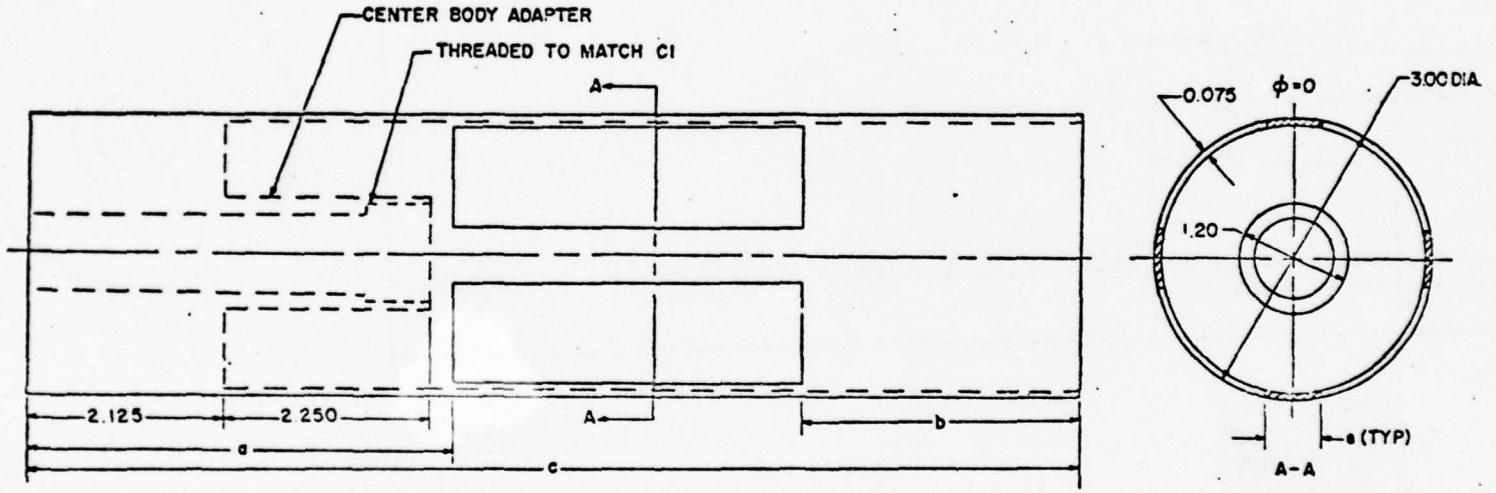
FIGURE 3. NOSE, N_1 AND BOATTAIL B_1 DETAILS



CONFIG	G
M1	6.625
M2	4.375
M3	2.125
M4	17.125

ALL DIMENSIONS IN INCHES

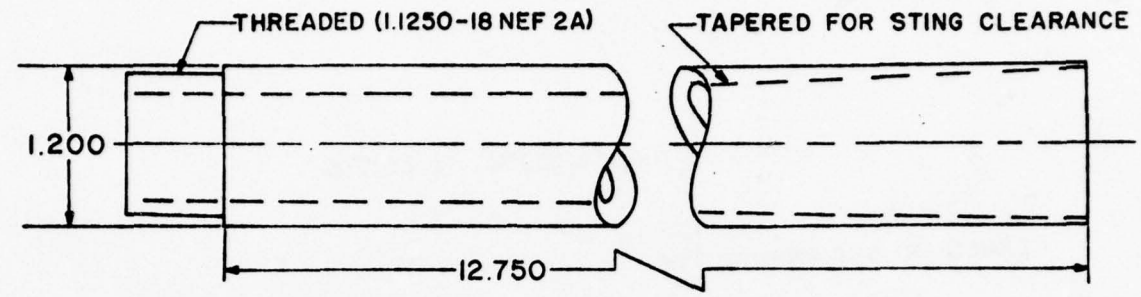
FIGURE 4. SOLID SLEEVE DETAILS



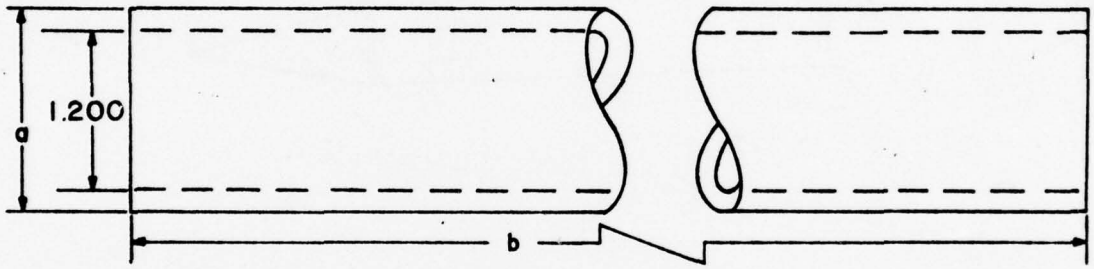
CONFIG	a	b	c	e
R1	6.625	3.000	17.125	0.600
R2	4.375	3.000	17.125	0.600
R3	2.125	3.000	17.125	0.600
R4	6.625	1.500	17.125	0.600
R5	6.625	3.000	17.125	1.200
R6	6.625	3.000	21.625	0.600

ALL DIMENSIONS IN INCHES

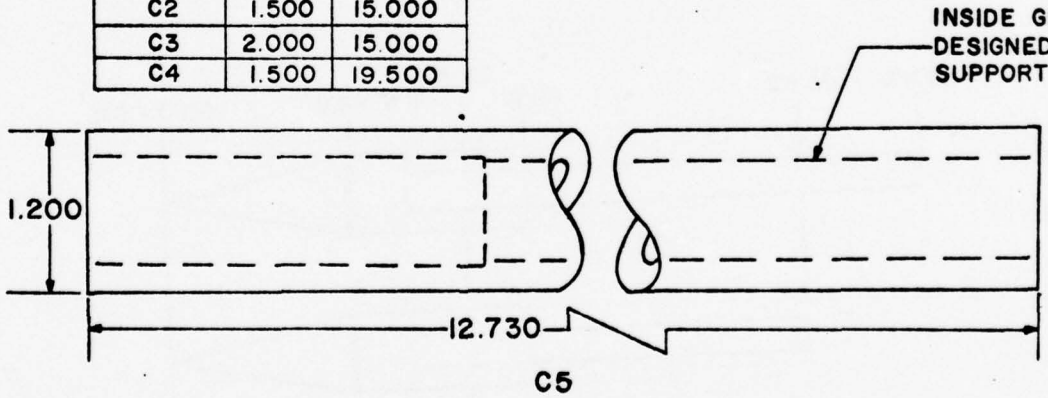
FIGURE 5. SOLID SLEEVE WITH RING TAIL DETAILS



C1



CONFIG	a	b
C2	1.500	15.000
C3	2.000	15.000
C4	1.500	19.500



C5

ALL DIMENSIONS IN INCHES

FIGURE 6. CENTERBODY DETAILS

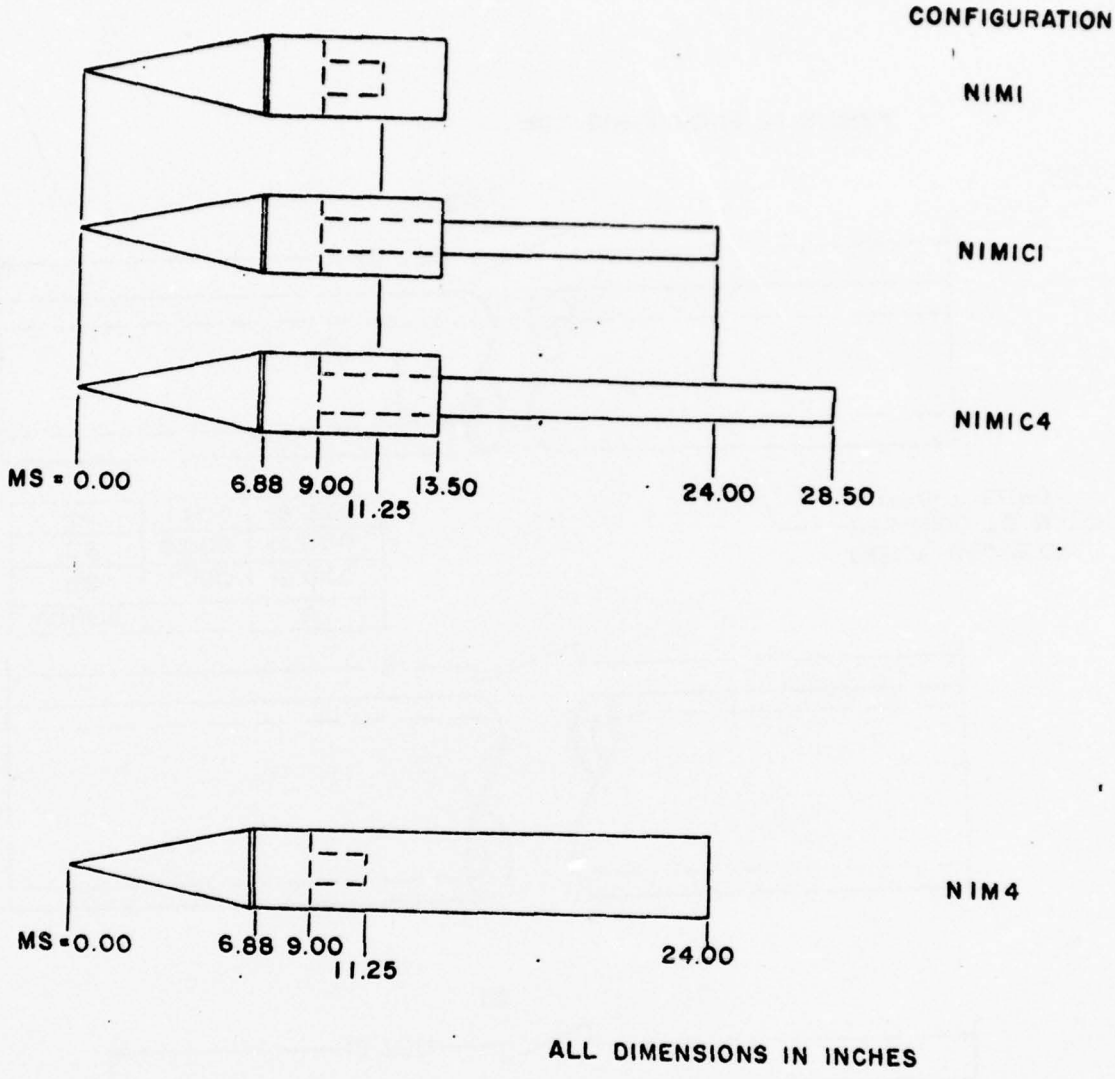
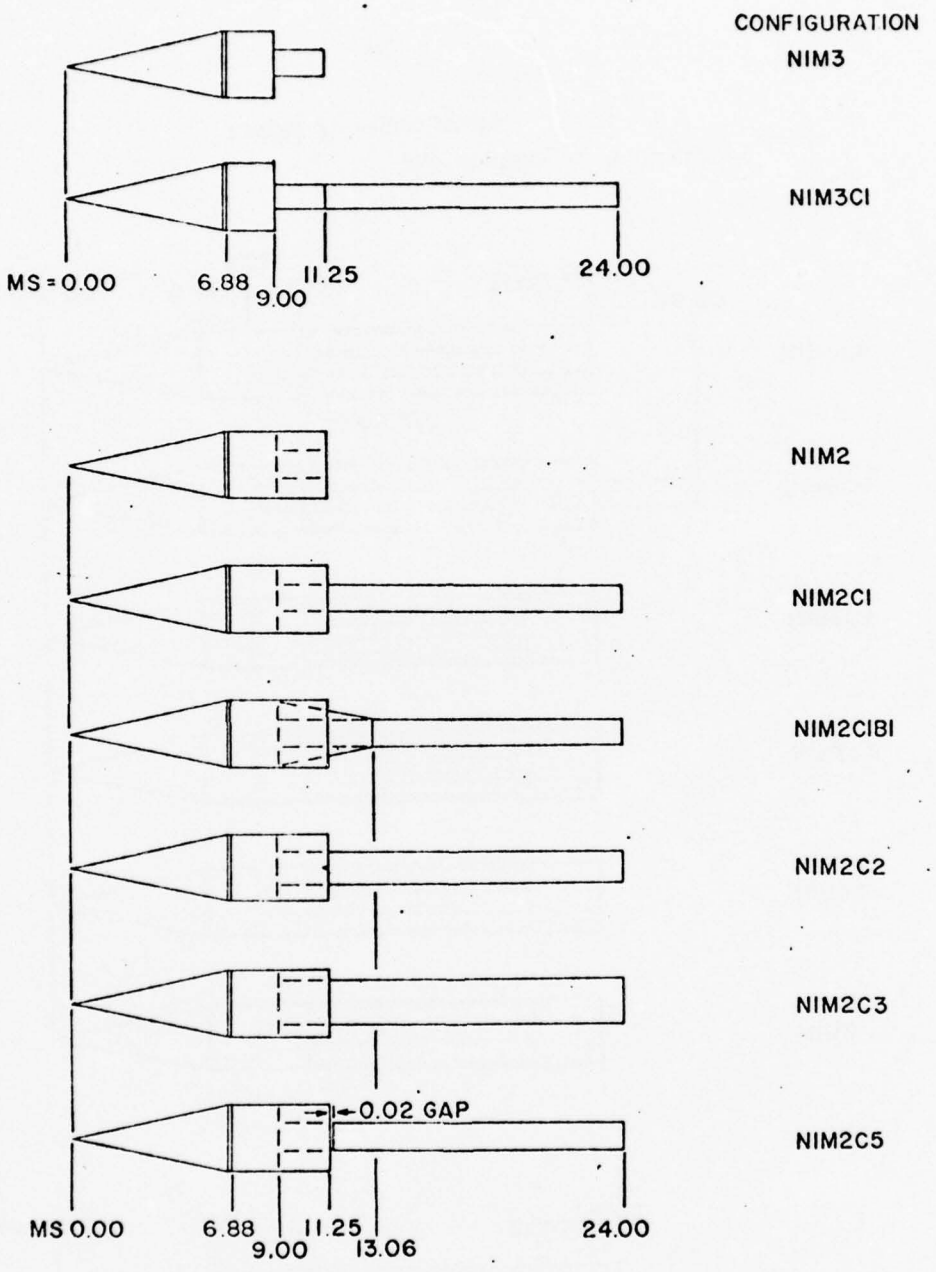
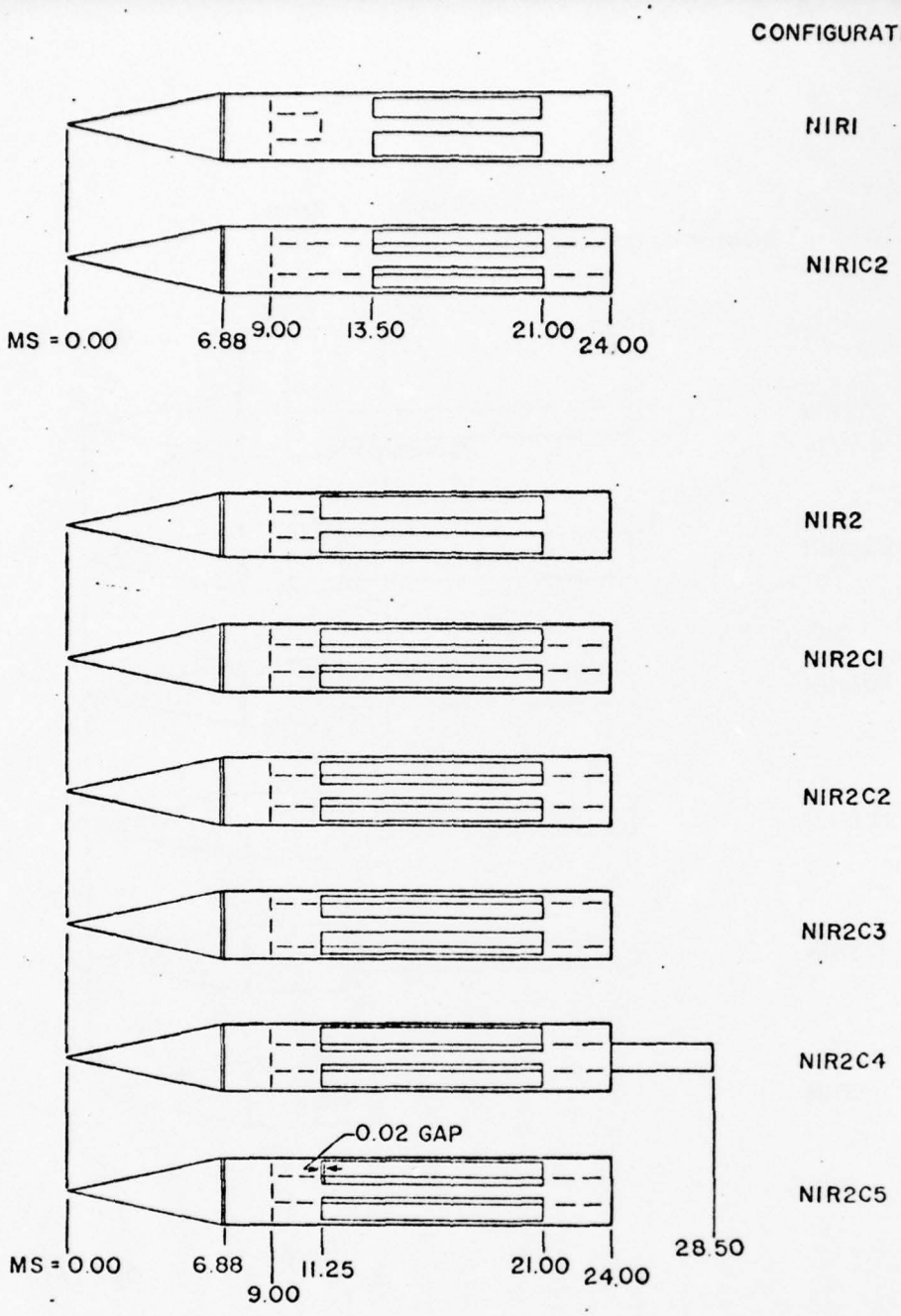


FIGURE 7. MODEL ASSEMBLY DETAILS



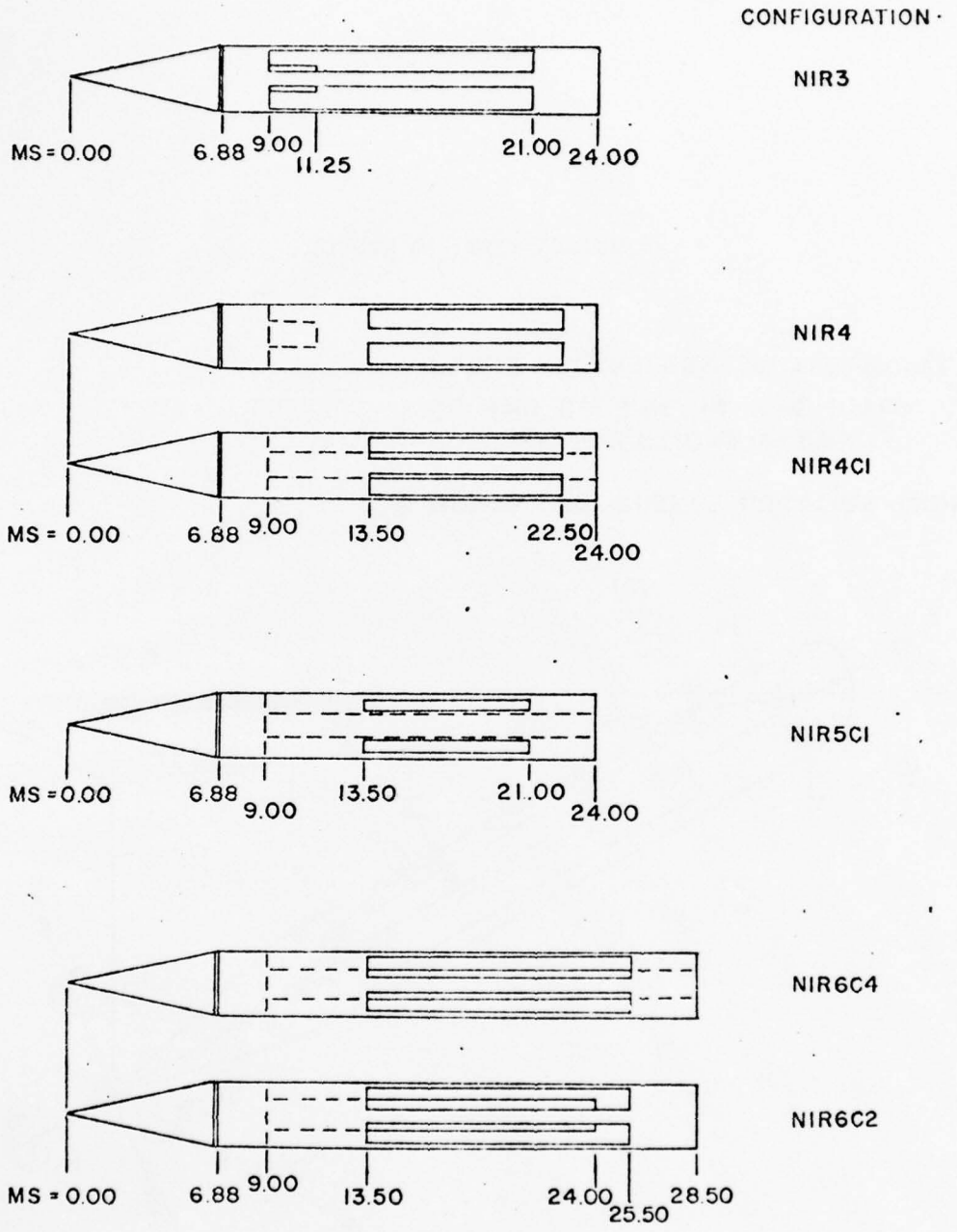
ALL DIMENSIONS IN INCHES

FIGURE 7. (CONTINUED)



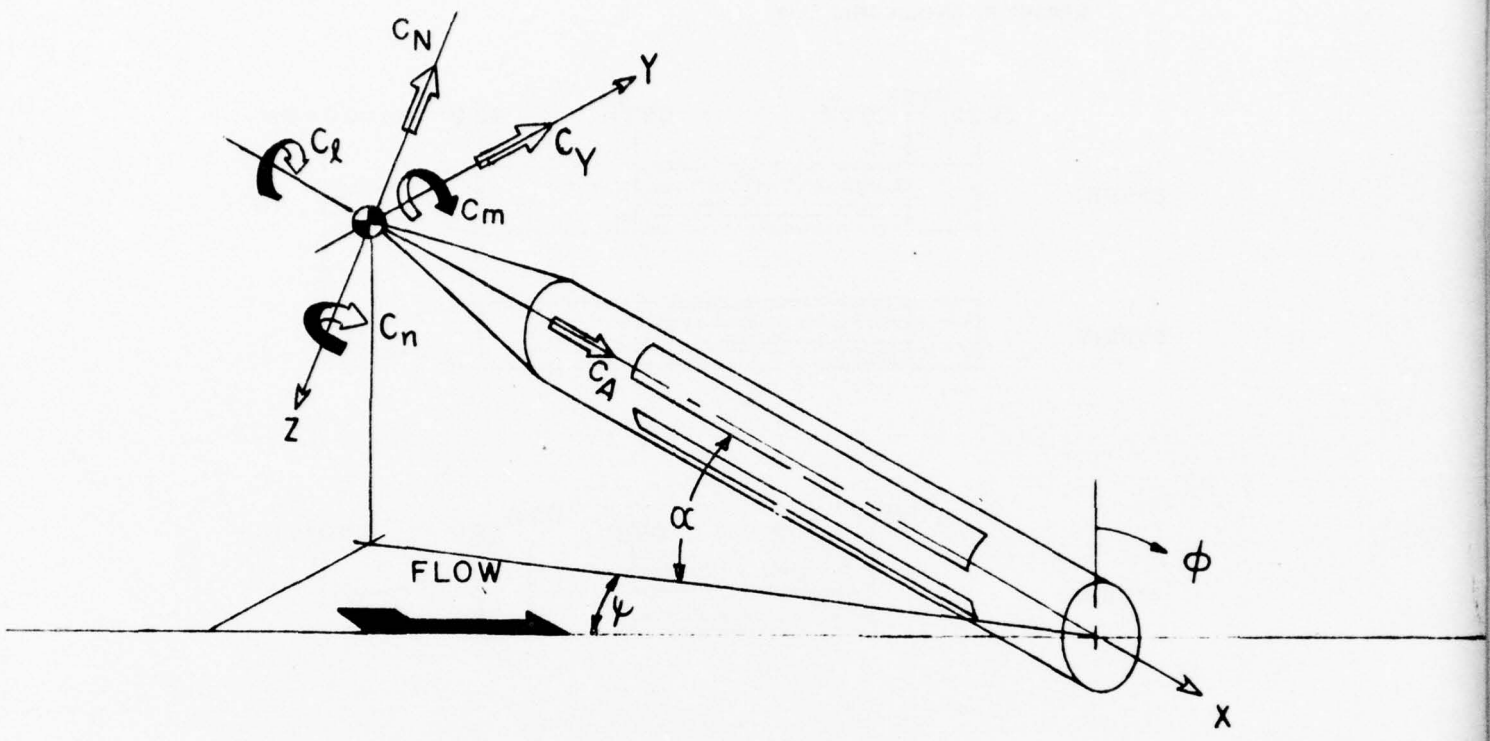
ALL DIMENSIONS IN INCHES

FIGURE 7. (CONTINUED)



ALL DIMENSIONS IN INCHES

FIGURE 7. (CONTINUED)



● MOMENT REFERENCE LOCATION (NOSE APEX)

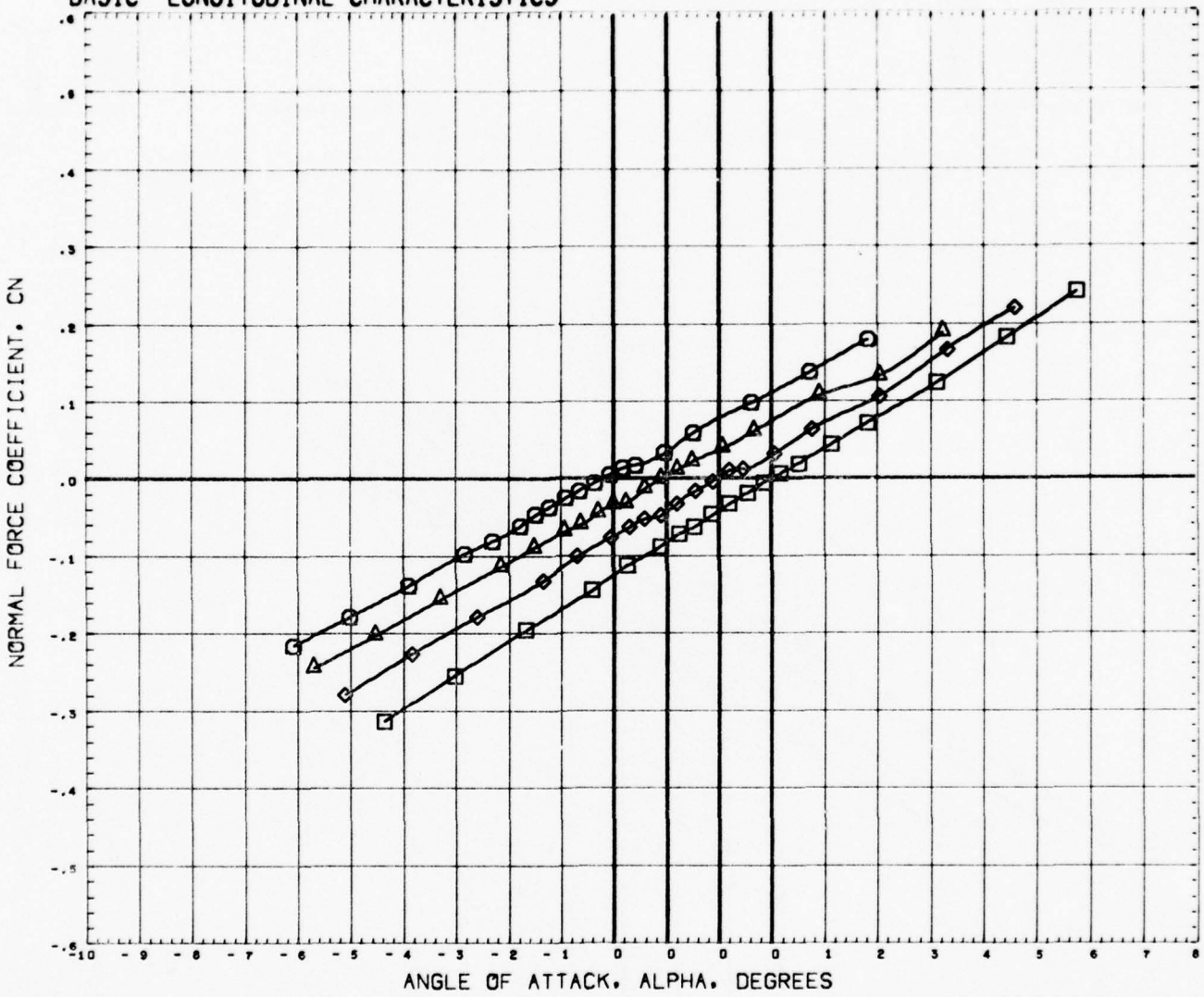
NOTE: POSITIVE DIRECTIONS SHOWN.
C_N AND C_m ARE IN THE PITCH PLANE REGARDLESS OF THE MODEL ATTITUDE

FIGURE 8. AXIS SYSTEM

D A T A F I G U R E S

Note: Tabular Data are available upon request.
If interested contact report originator.

BASIC LONGITUDINAL CHARACTERISTICS

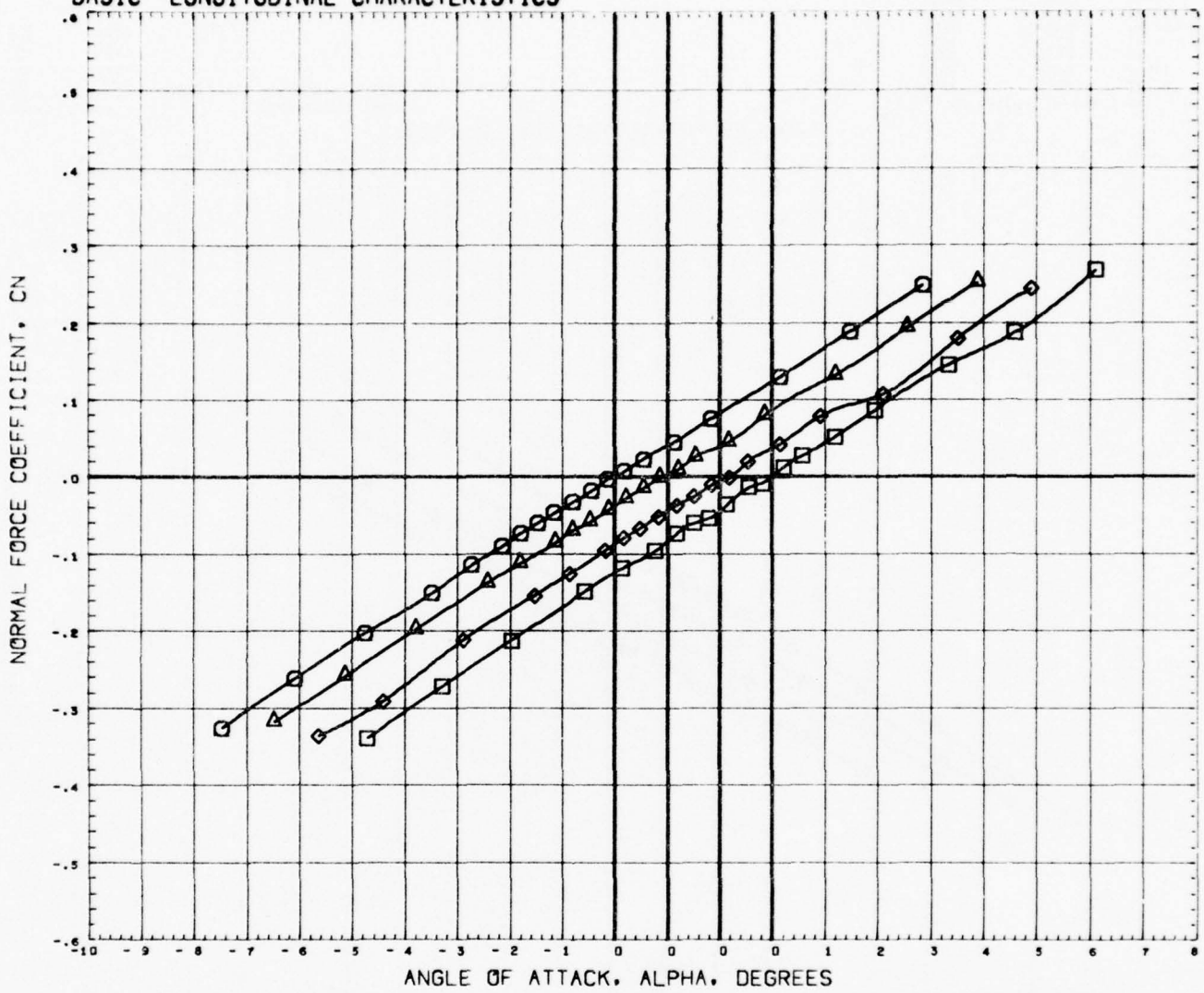


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.499	PHI	0.000	M-LGTH	2.250
△	0.802				
◇	0.948				
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

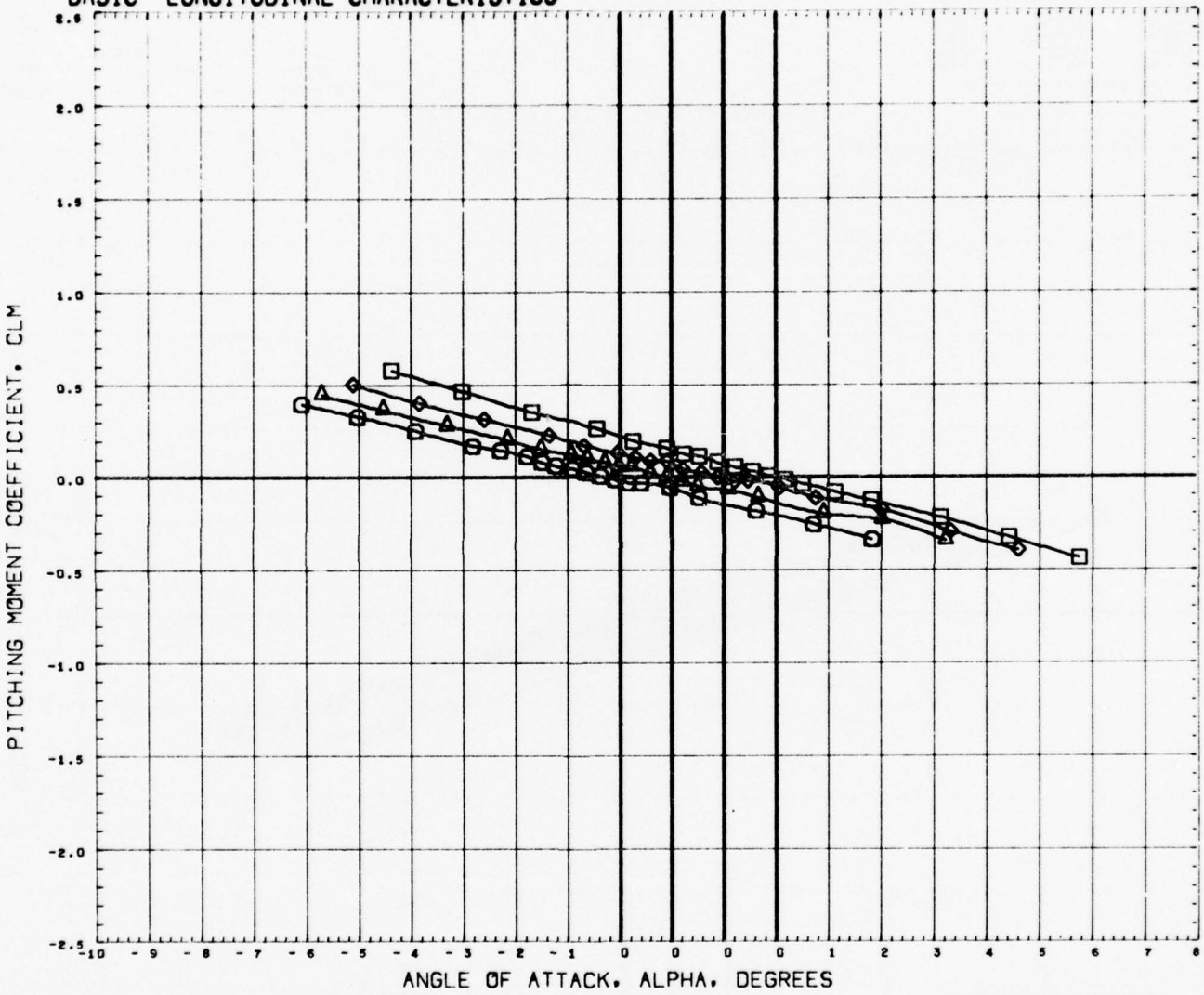


SYMBOL	MACH	PARAMETRIC VALUES			
○	1.050	PHI	0.000	M-LGTH	2.250
△	1.095				
◇	1.198				
□	1.297				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



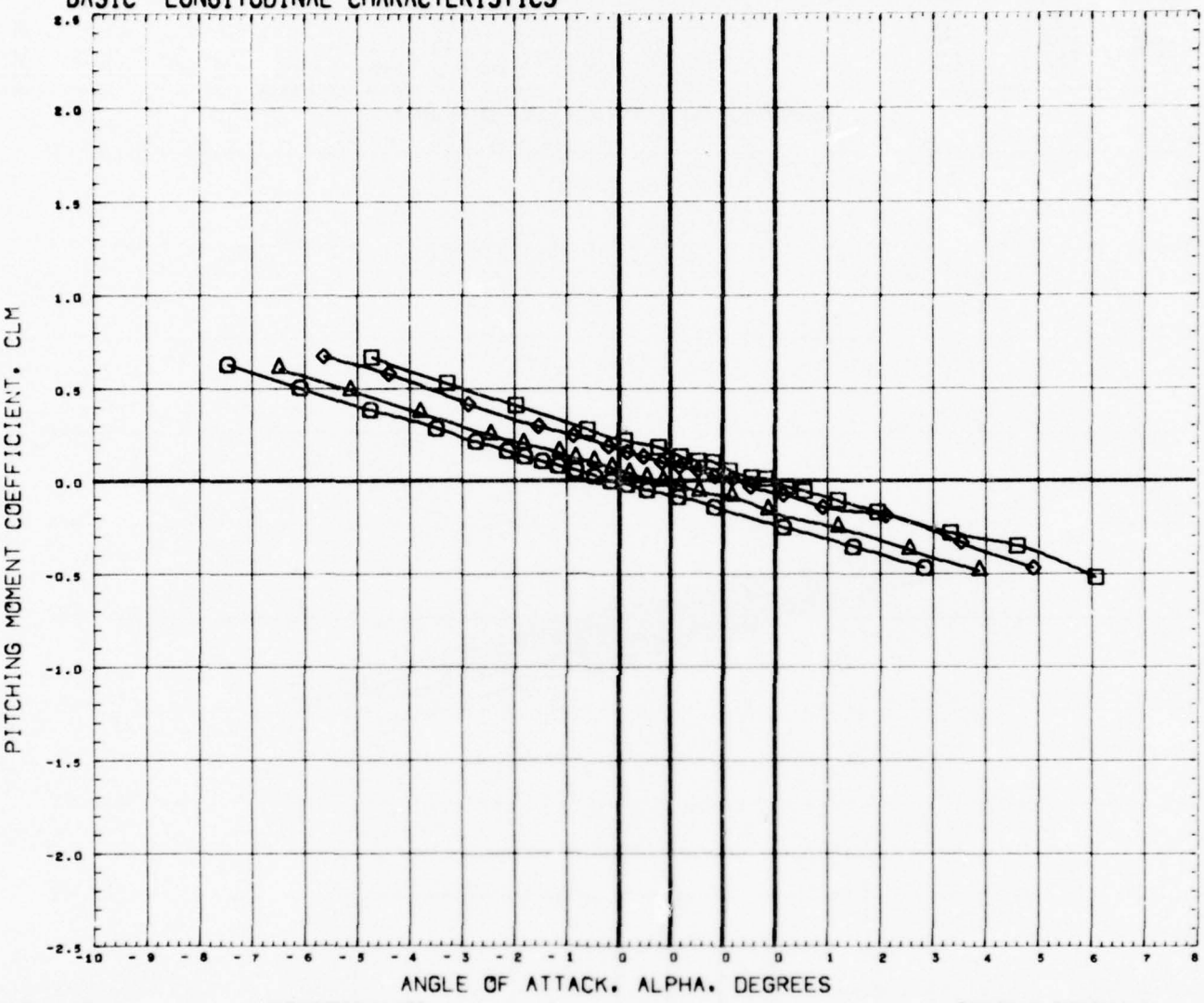
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.499	PHI	0.000	M-LGTH	2.250
△	0.802				
◇	0.948				
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

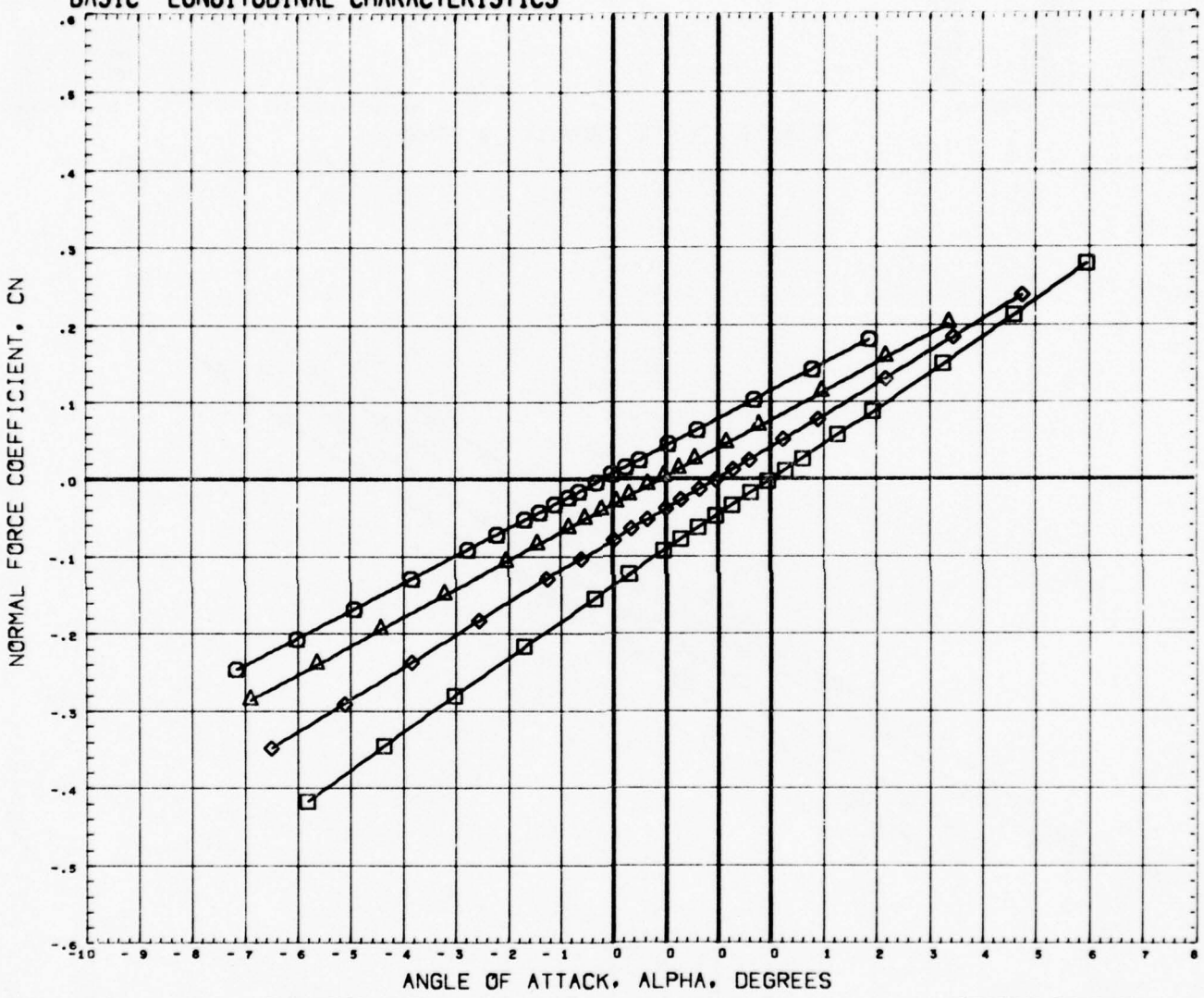


SYMBOL	MACH	PARAMETRIC VALUES			
○	1.050	PHI	0.000	M-LGTH	2.250
△	1.095				
◇	1.198				
□	1.297				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH	PARAMETRIC VALUES			
○	0.499	PHI	0.000	M-LGTH	1.500
△	0.802				
◇	0.951				
□	1.004				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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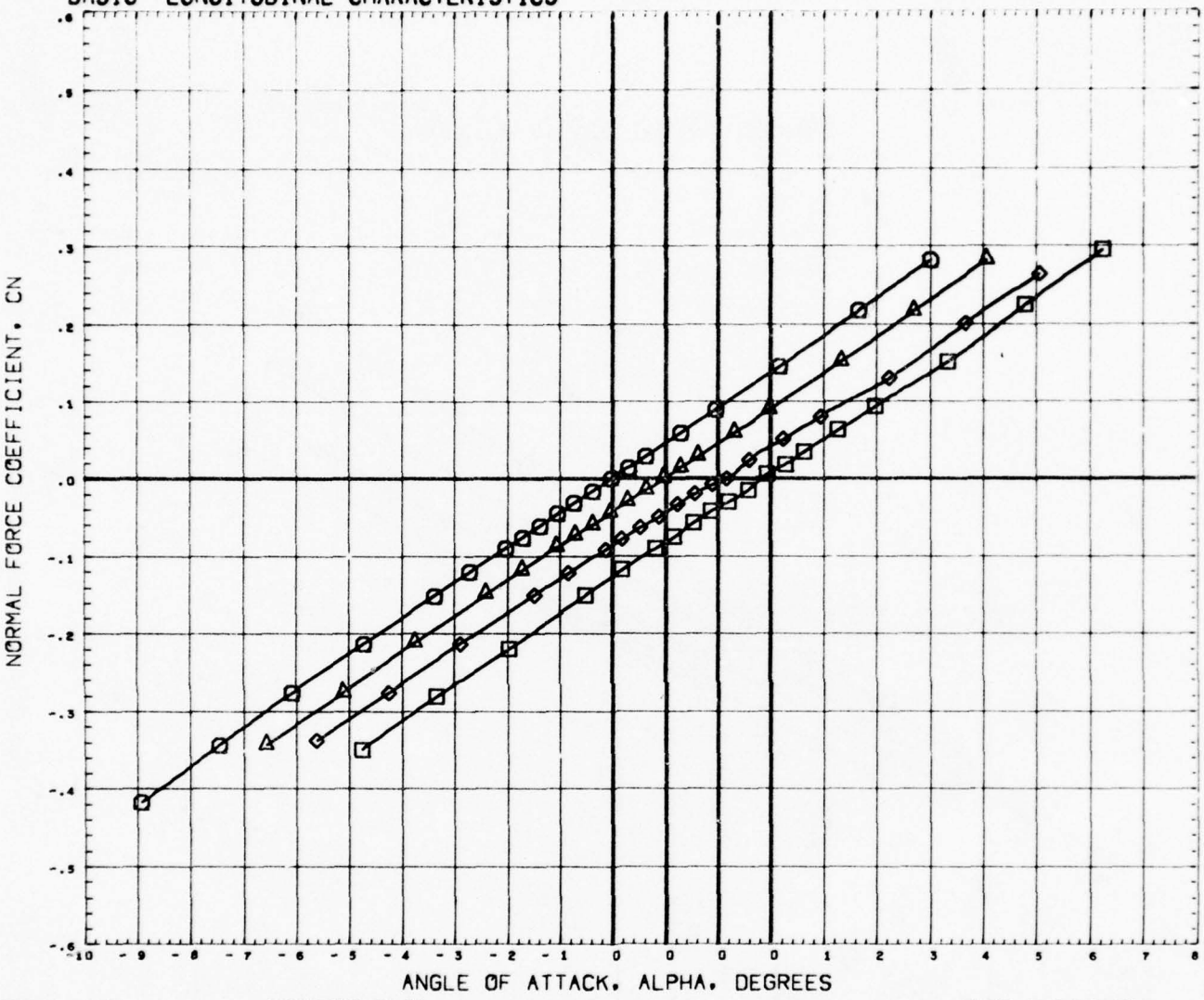
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



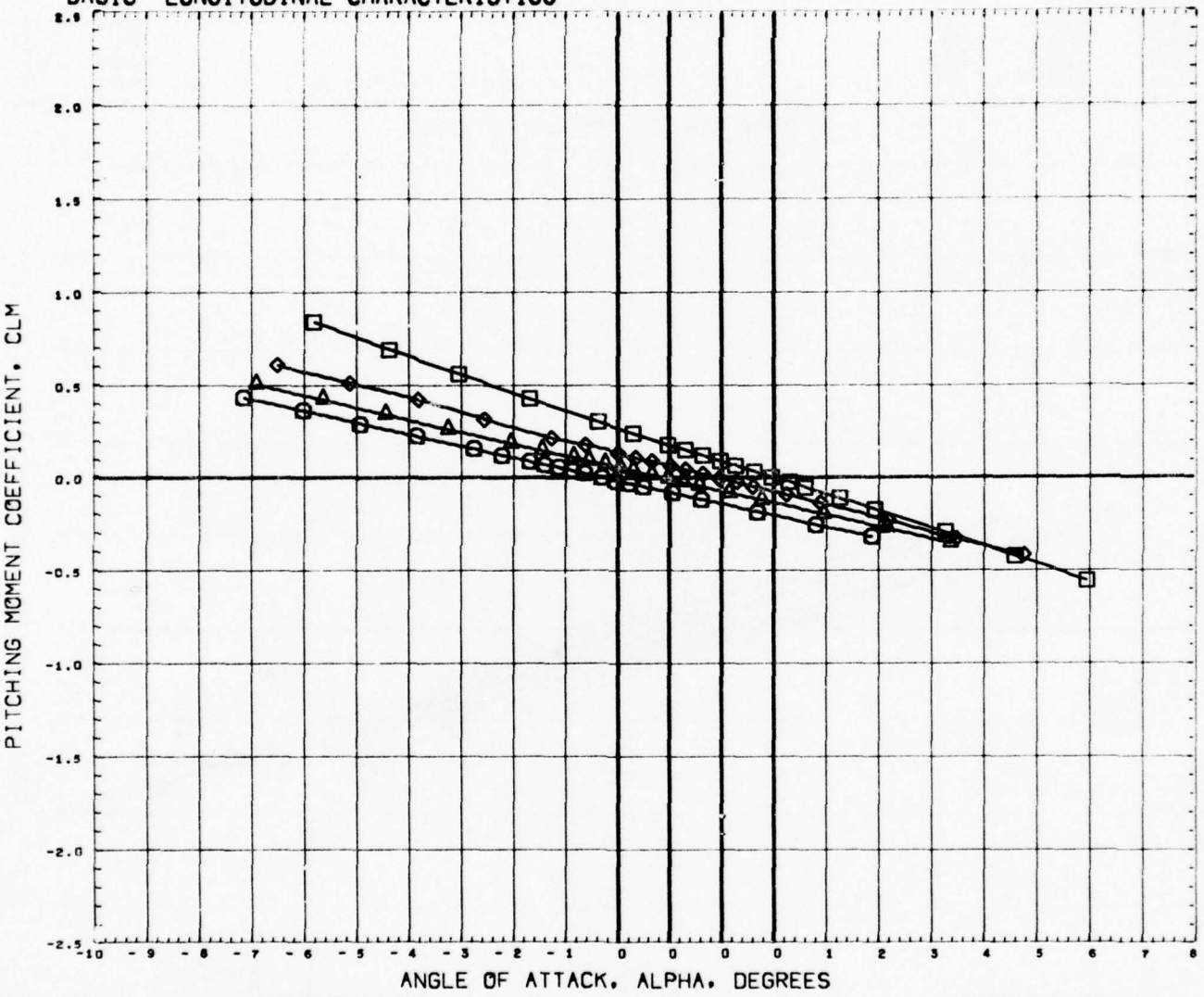
SYMBOL	MACH	PARAMETRIC VALUES			
○	1.050	PHI	0.000	M-LGTH	1.500
△	1.097				
◇	1.197				
□	1.295				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



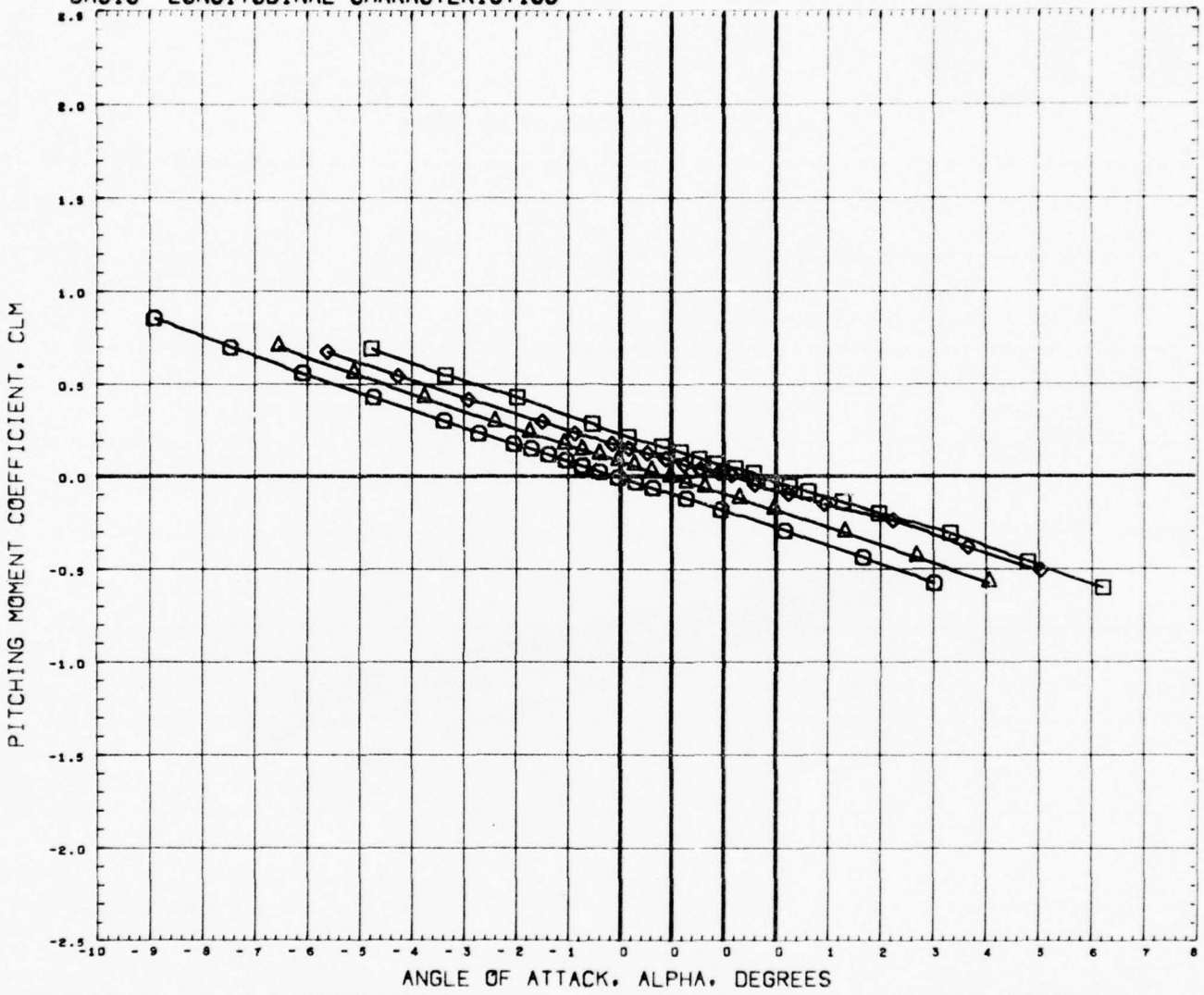
SYMBOL	MACH	PARAMETRIC VALUES			
○	0.499	PHI	0.000	M-LGTH	1.500
△	0.802				
◇	0.951				
□	1.004				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

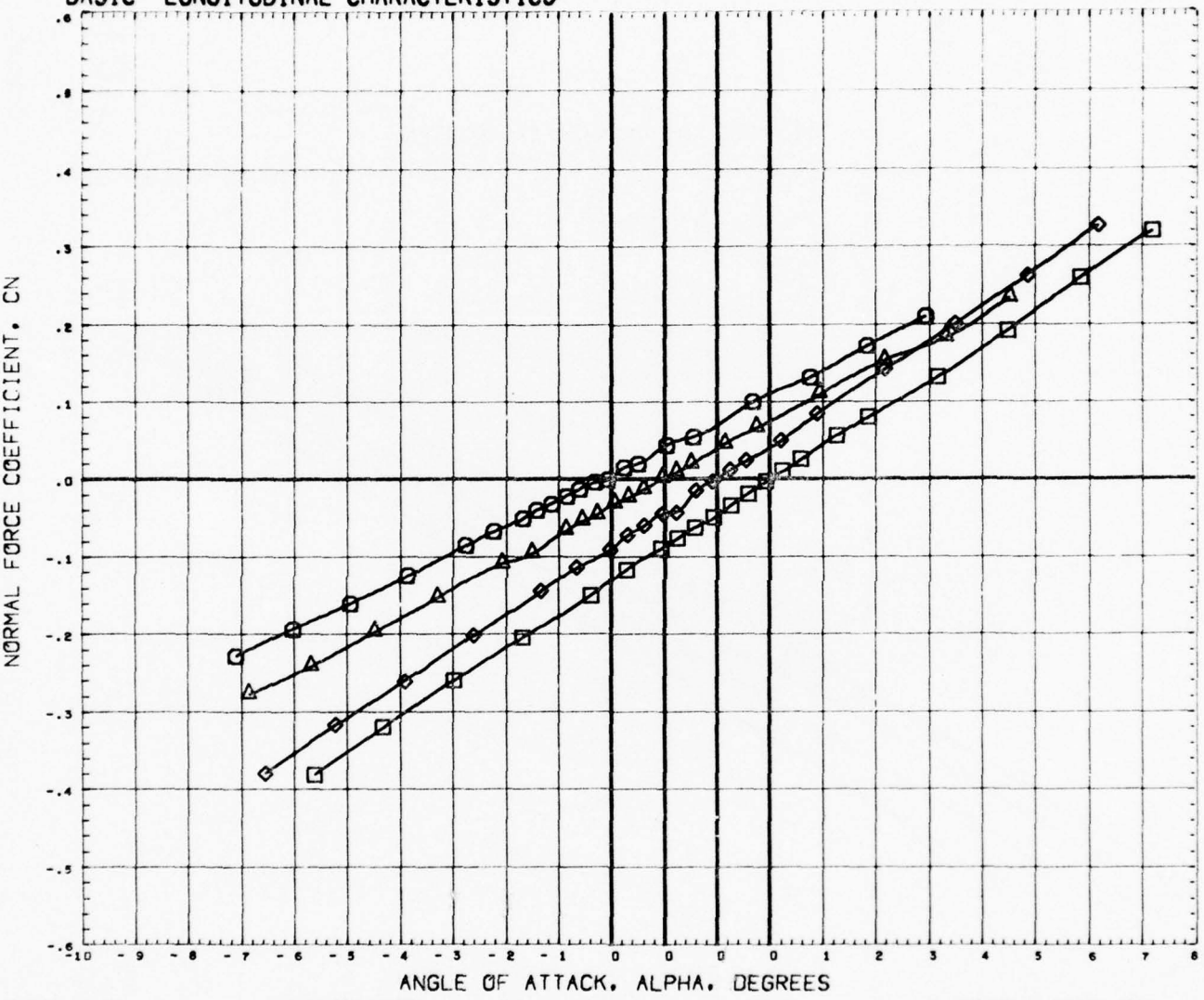


SYMBOL	MACH	PARAMETRIC VALUES			
○	1.050	PHI	0.000	M-LGTH	1.500
△	1.097				
◇	1.197				
□	1.295				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

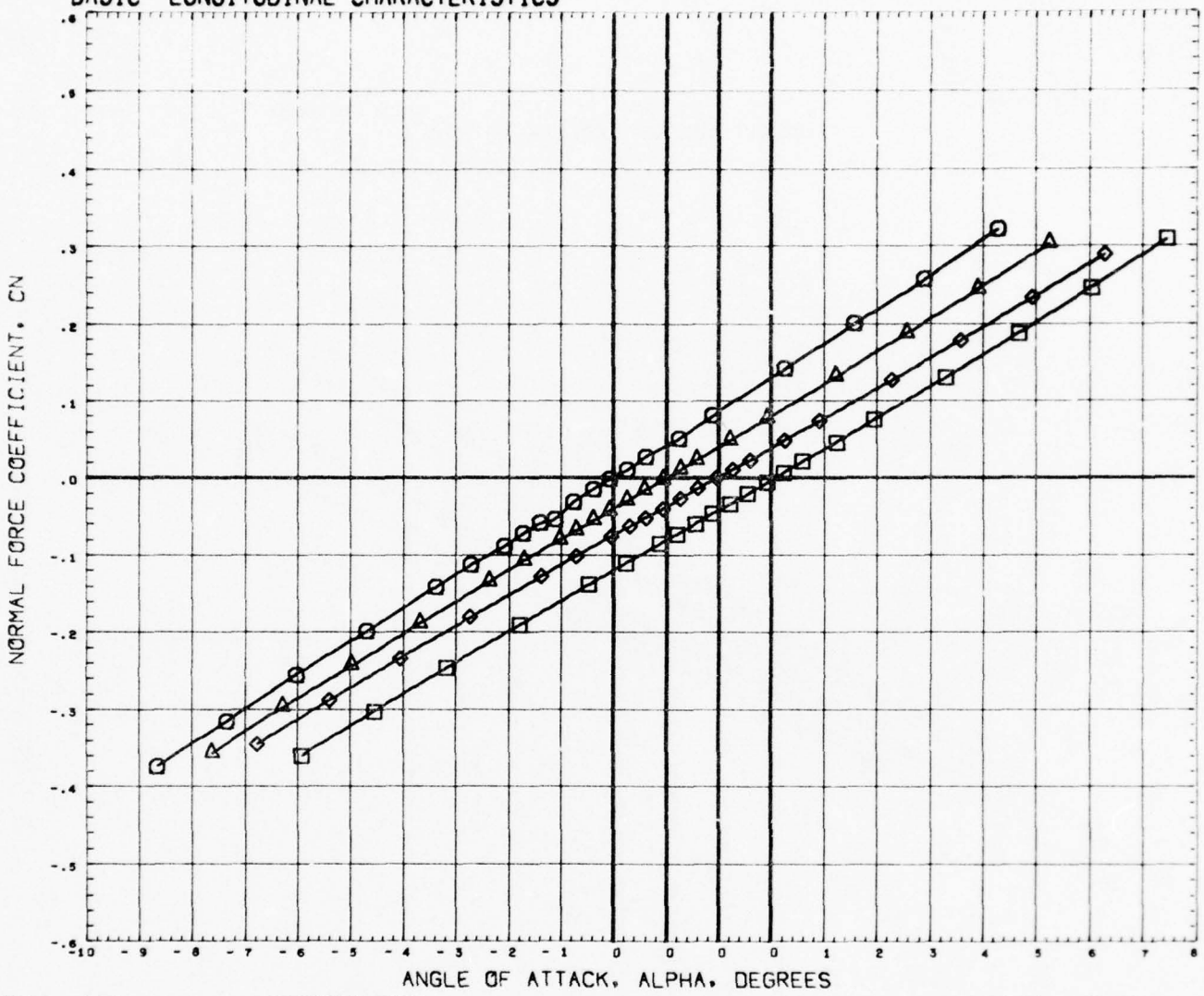


SYMBOL	MACH	PARAMETRIC VALUES			
○	0.439	PHI	0.000	M-LGTH	0.750
△	0.800				
◇	0.952				
□	0.996				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



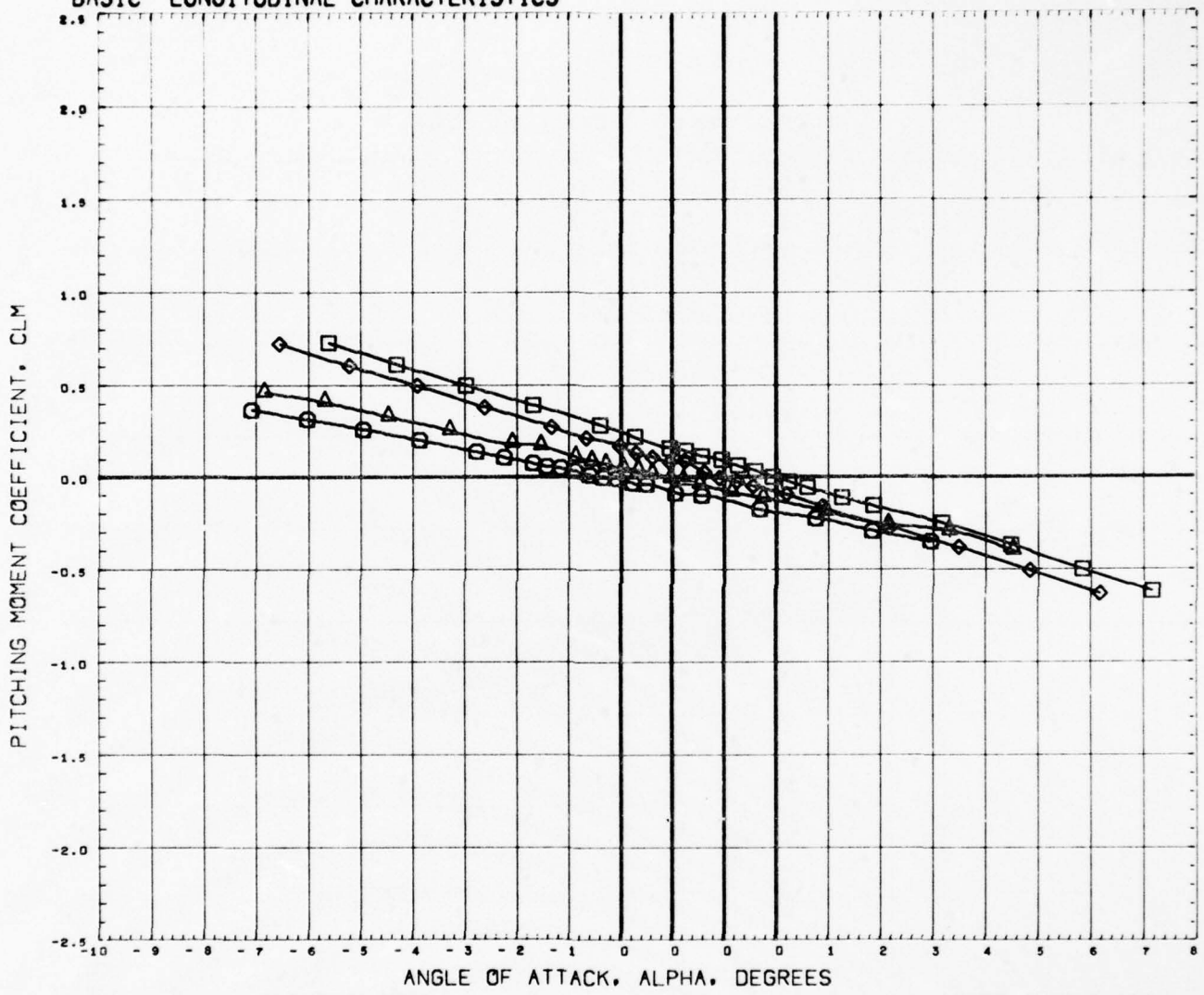
SYMBOL	MACH	PARAMETRIC VALUES			
○	1.051	PHI	0.000	M-LGTH	0.750
△	1.096				
◇	1.200				
□	1.300				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

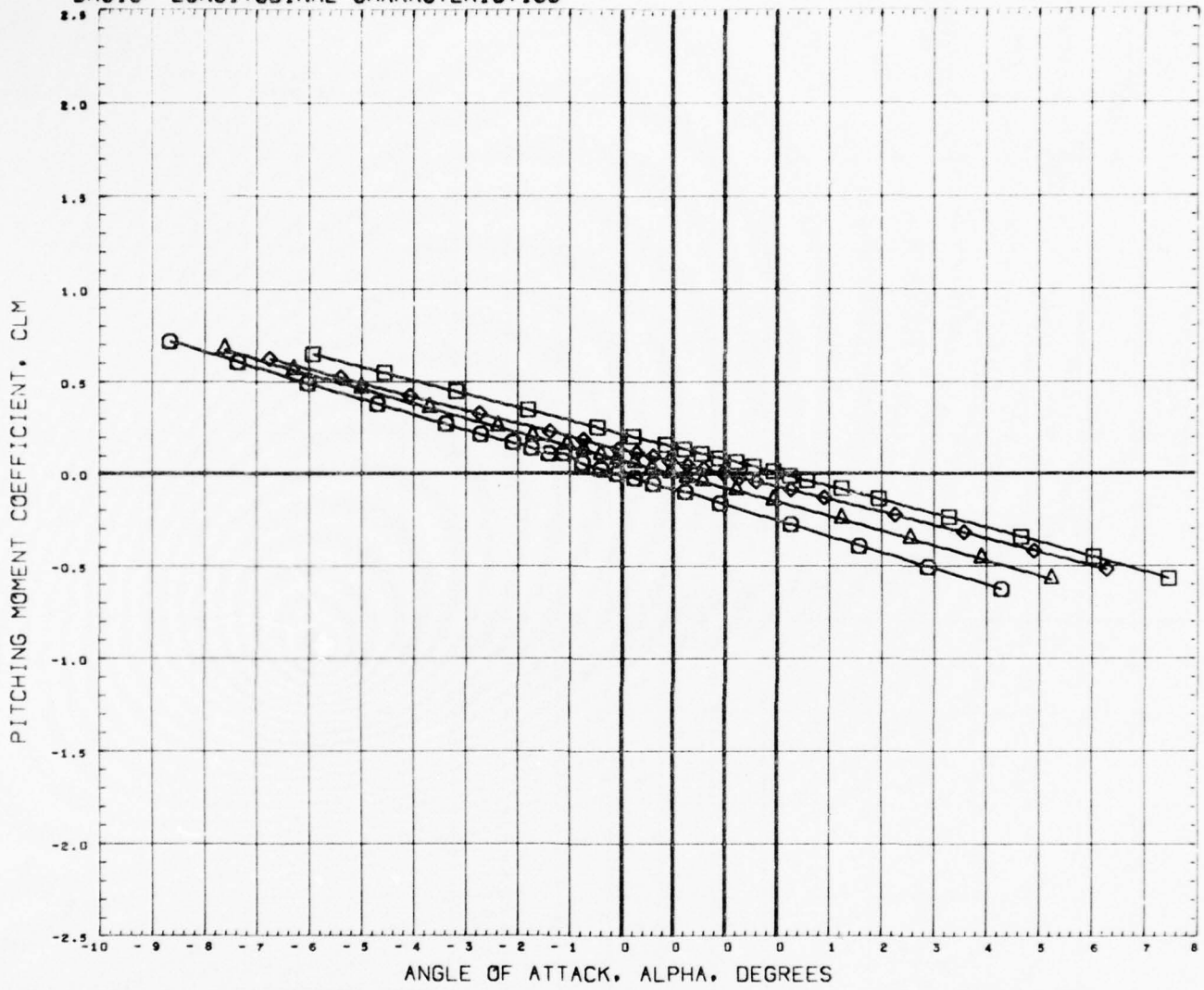


SYMBOL	MACH	PARAMETRIC VALUES			
○	0.499	PHI	0.000	M-LGTH	0.750
△	0.800				
◇	0.952				
□	0.996				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

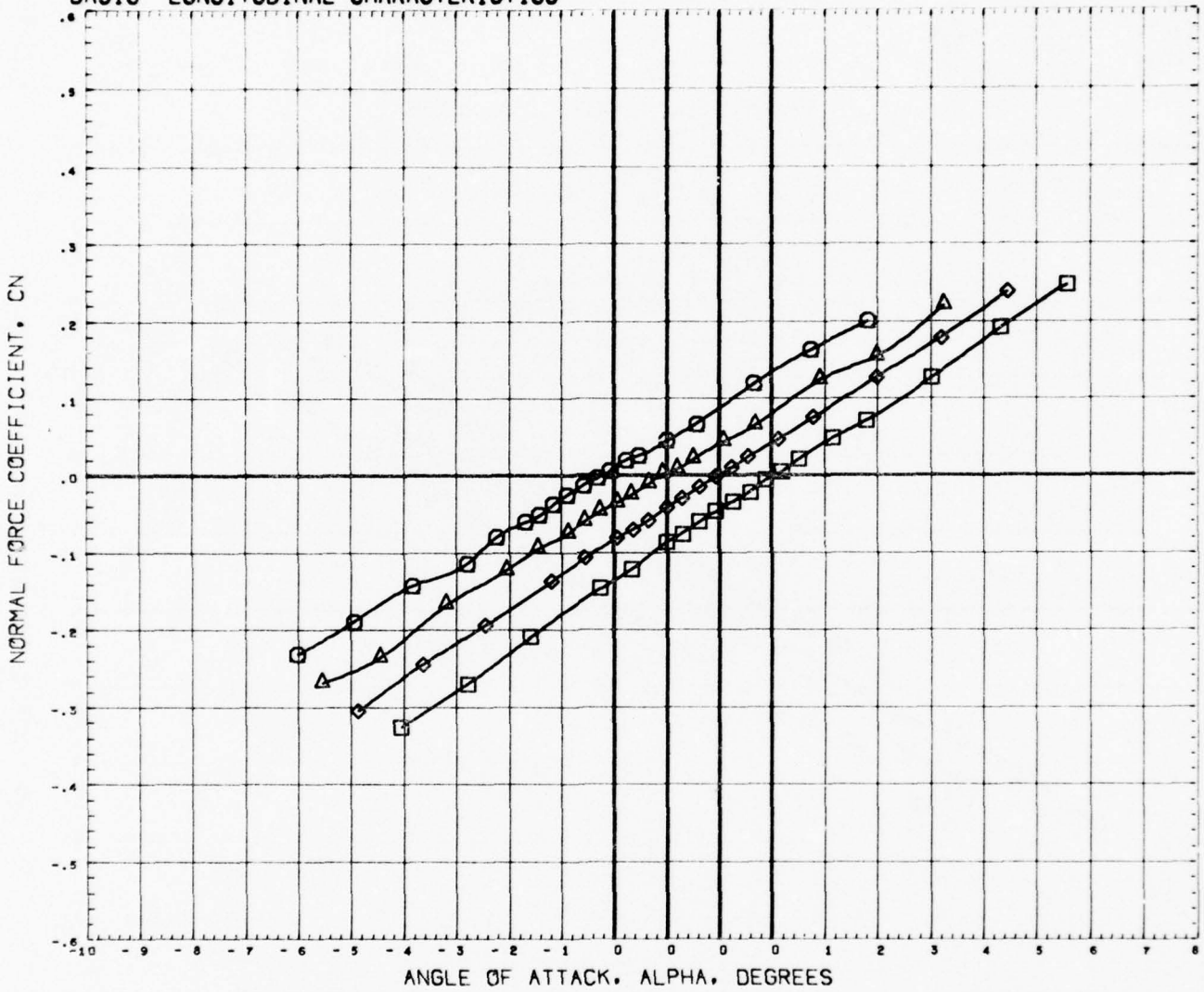


SYMBOL	MACH	PARAMETRIC VALUES			
○	1.051	PHI	0.000	M-LGTH	0.750
△	1.096				
◇	1.200				
□	1.300				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



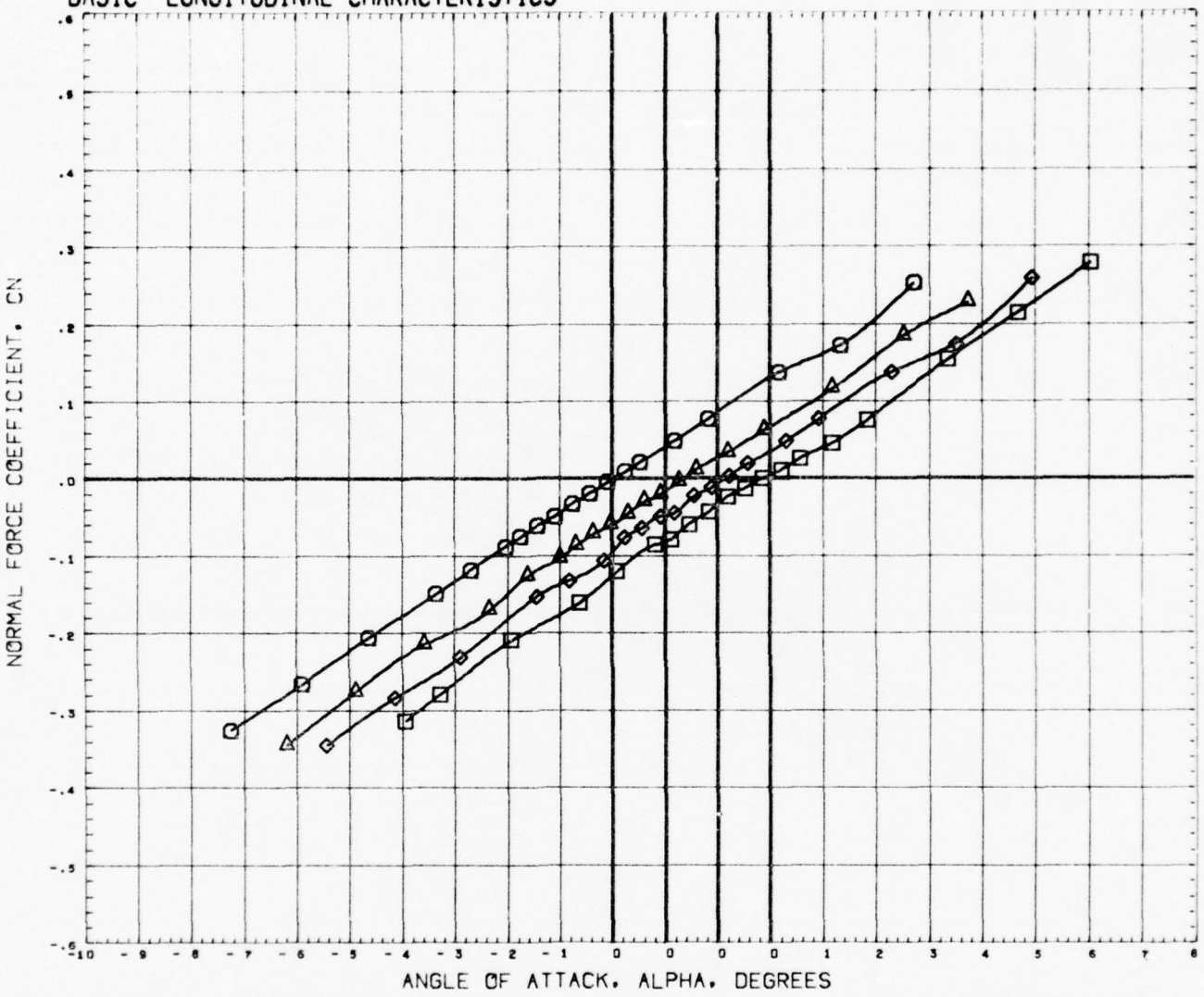
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.502	PHI	0.000	M-LGTH	5.750
△	0.801				
◇	0.949				
□	0.998				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



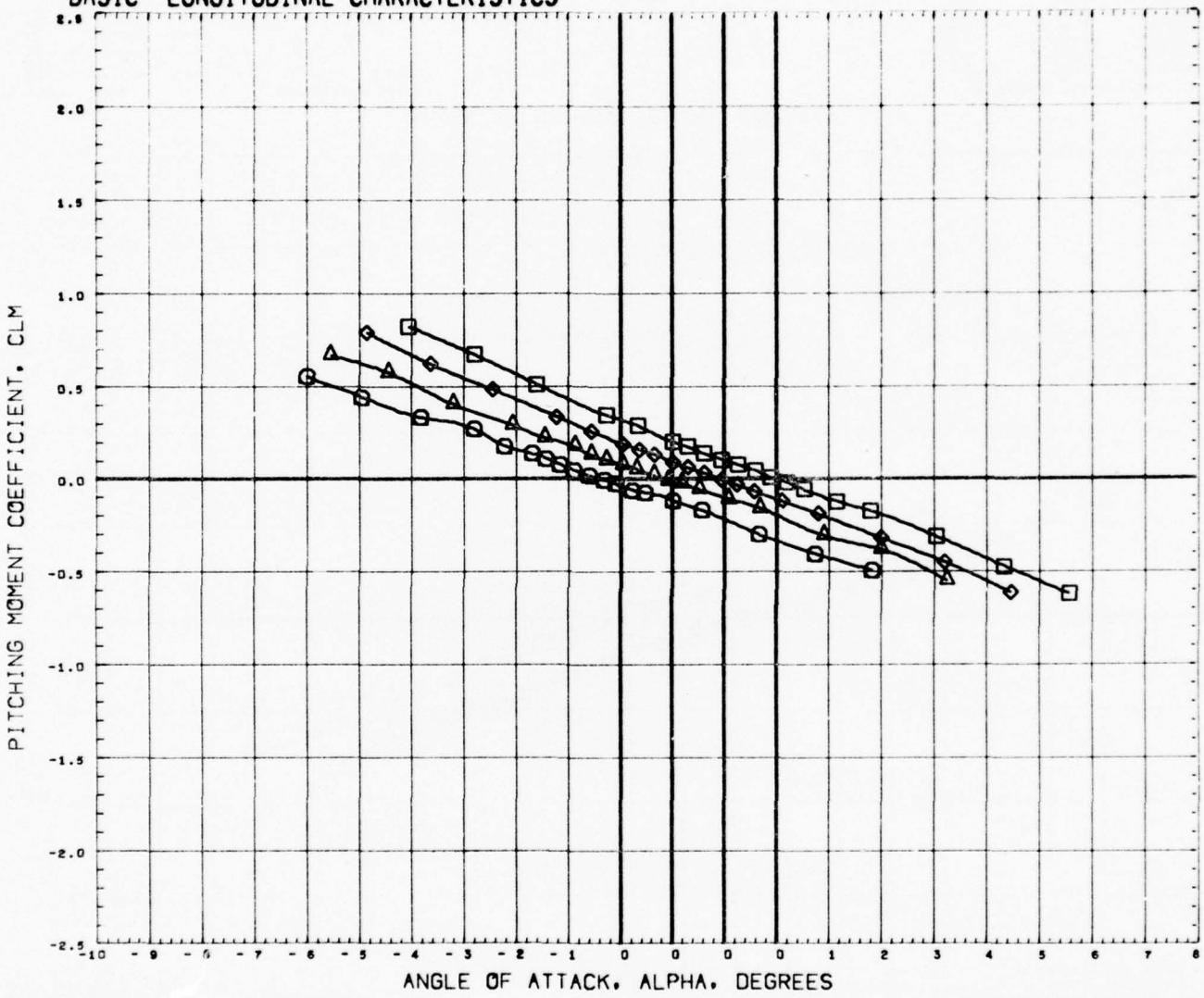
SYMBOL	MACH	PARAMETRIC VALUES			
○	1.046	PHI	0.000	M-LGTH	5.750
△	1.097				
◇	1.195				
□	1.297				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



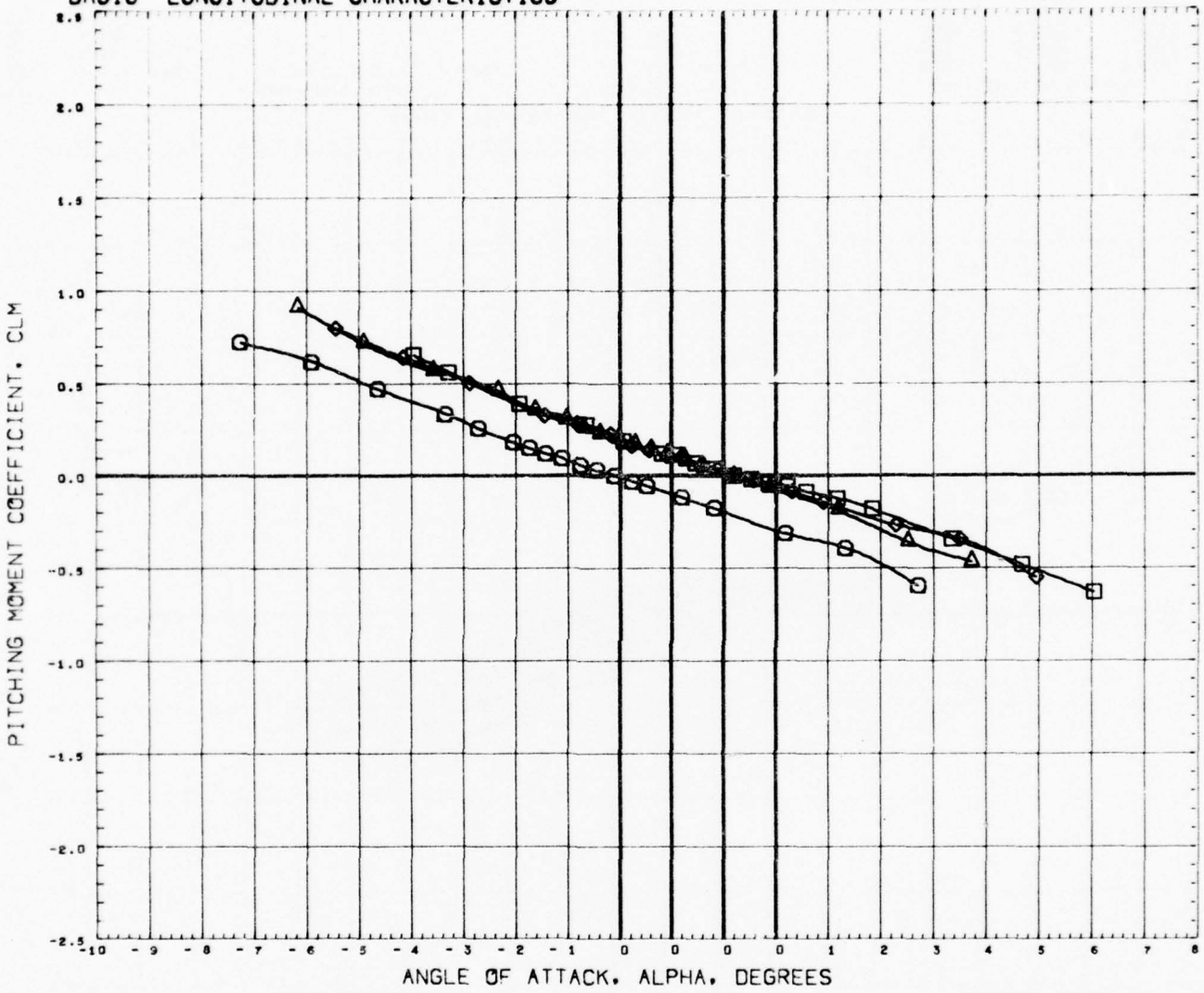
SYMBOL	MACH	PARAMETRIC VALUES			
○	0.502	PHI	0.000	M-LGTH	5.750
△	0.801				
◇	0.949				
□	0.998				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



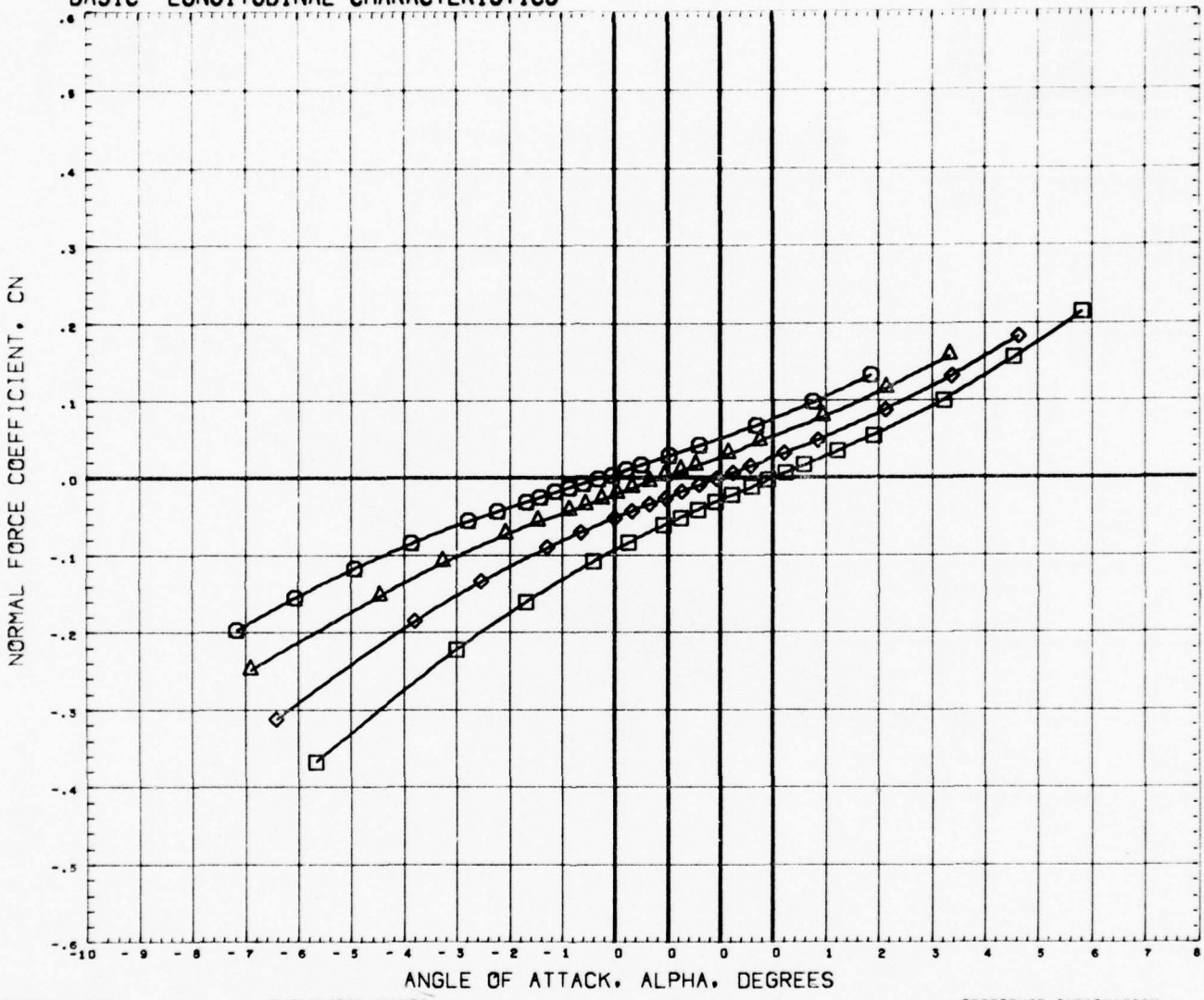
SYMBOL	MACH	PARAMETRIC VALUES			
○	1.046	PHI	0.000	M-LGTH	5.750
△	1.097				
◇	1.195				
□	1.297				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

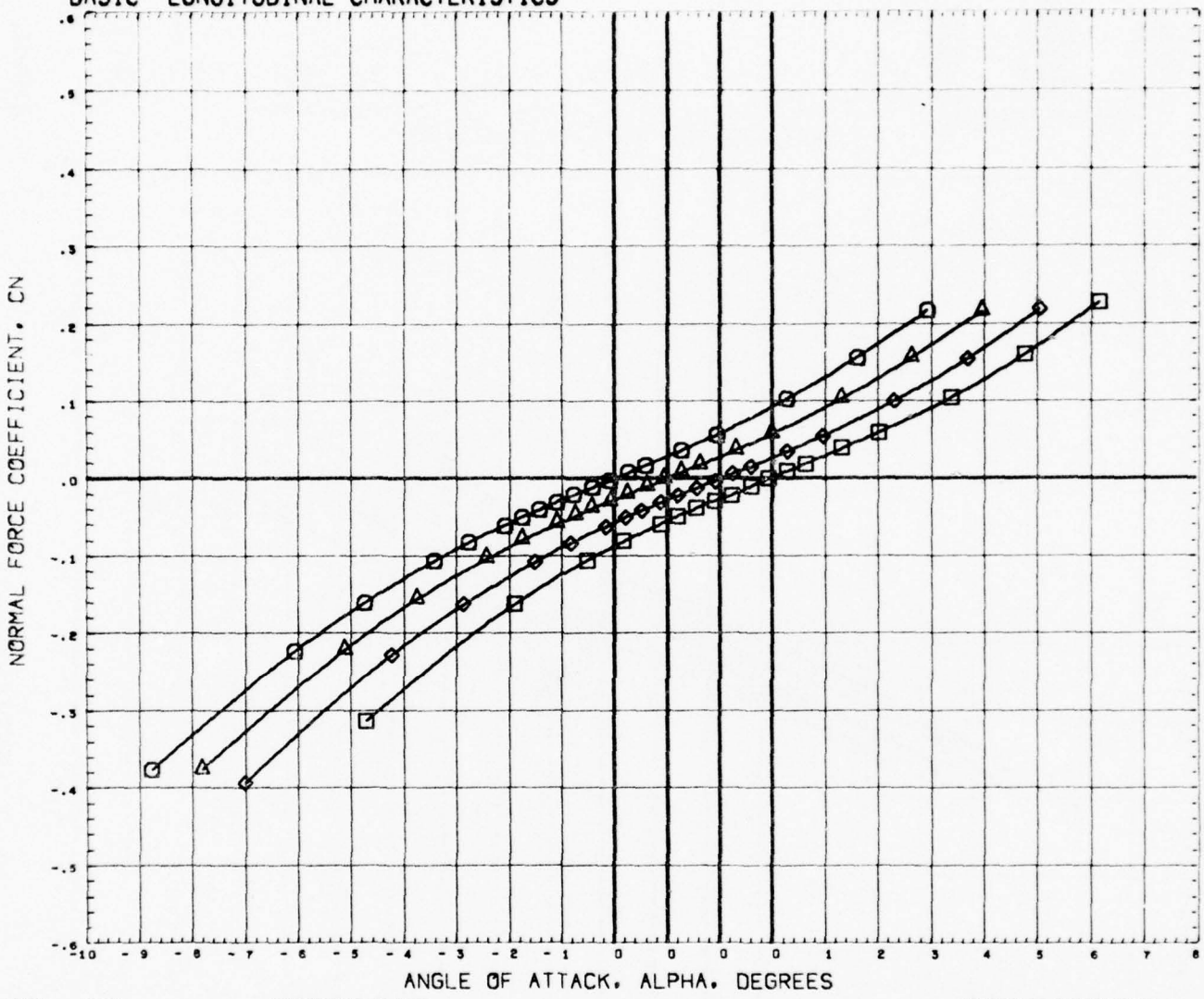


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	2.250
△	0.799	C-LGTH	5.000	C-DIA	0.400
◇	0.951				
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

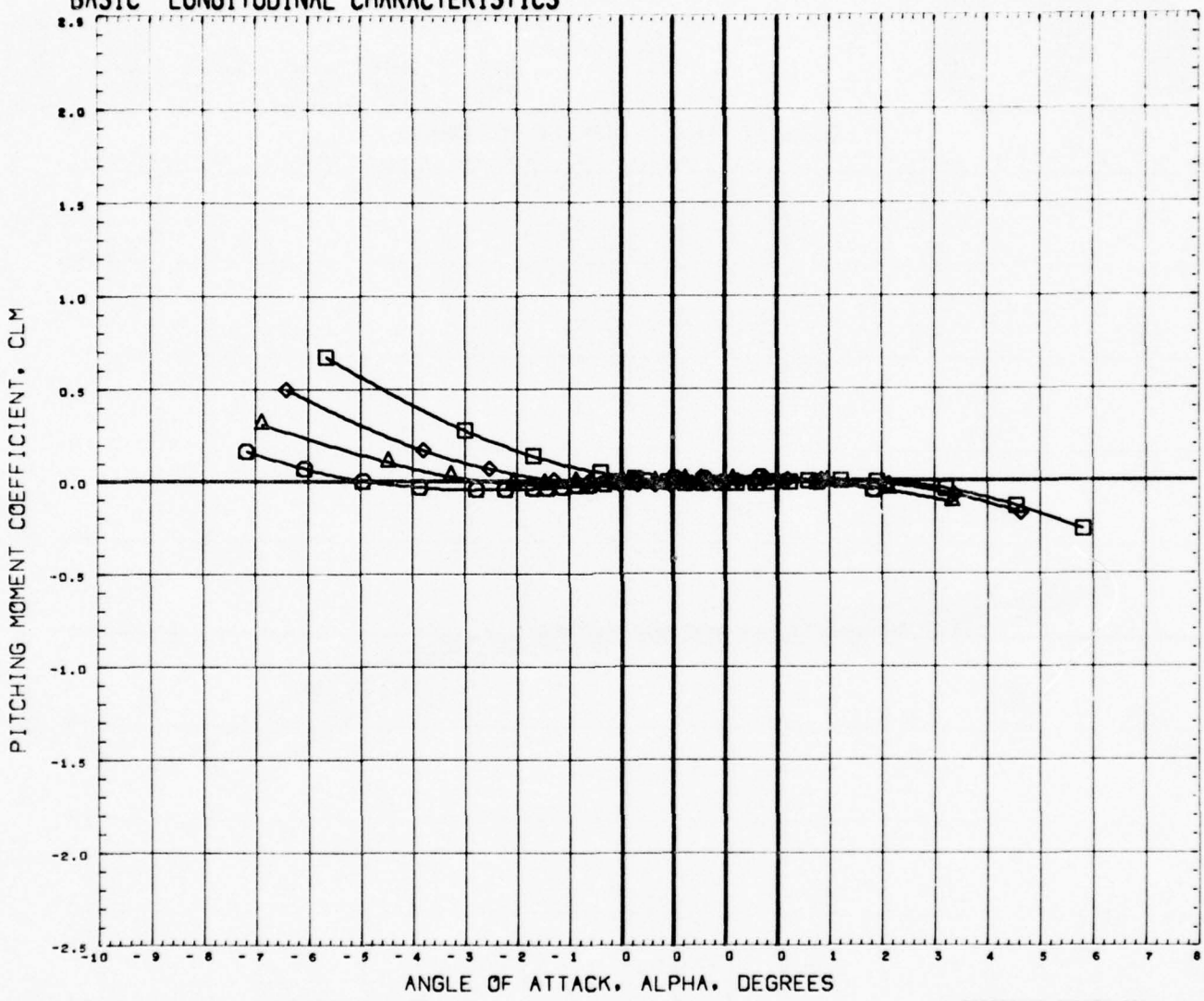


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.053	PHI	0.000	M-LGTH	2.250
△	1.099	C-LGTH	5.000	C-DIA	0.400
◇	1.200				
□	1.298				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

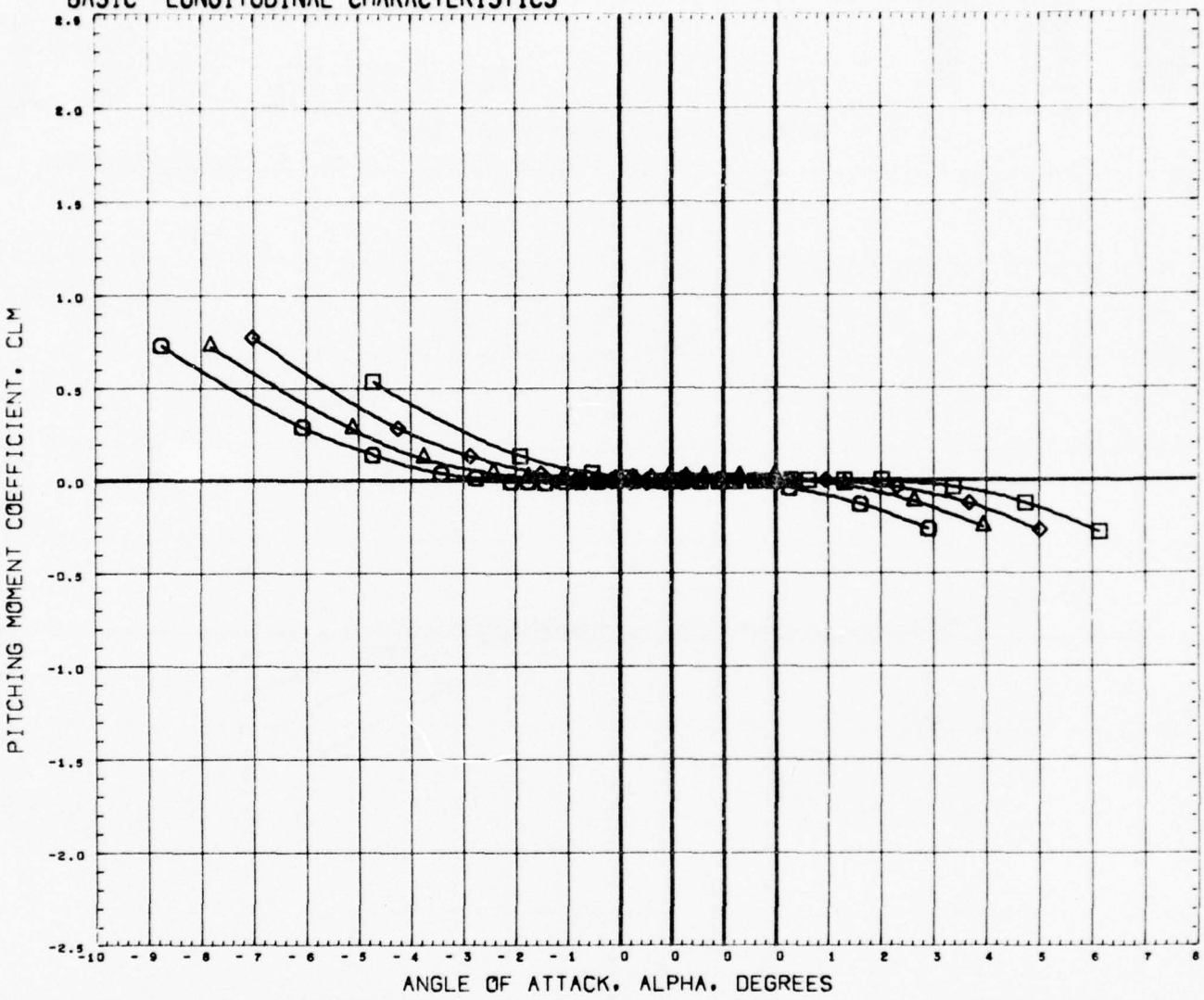


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	2.250
△	0.799	C-LGTH	5.000	C-DIA	0.400
◇	0.951				
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



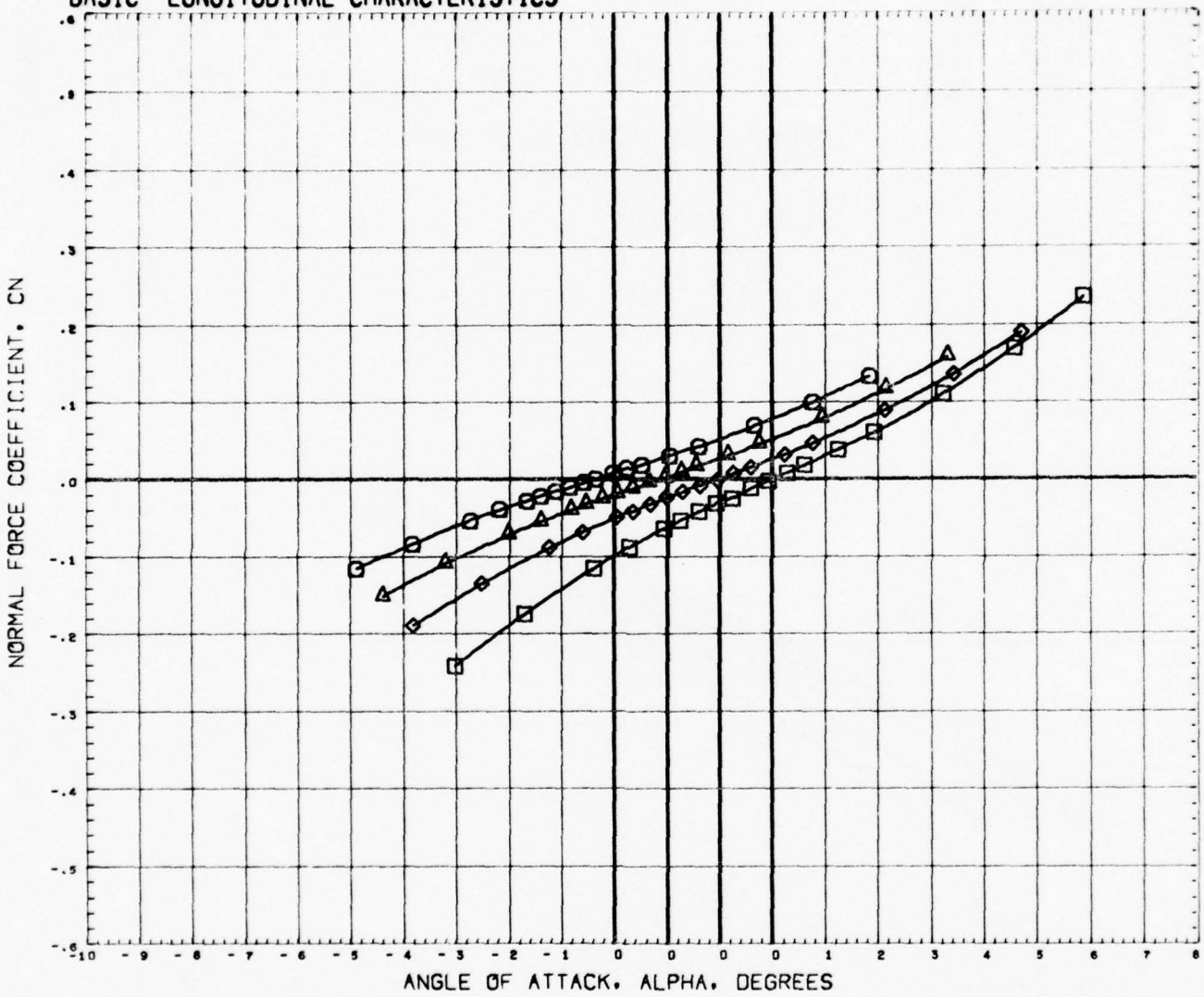
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.053	PHI	0.000	M-LGTH	2.250
△	1.099	C-LGTH	5.000	C-DIA	0.400
◇	1.200				
□	1.298				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



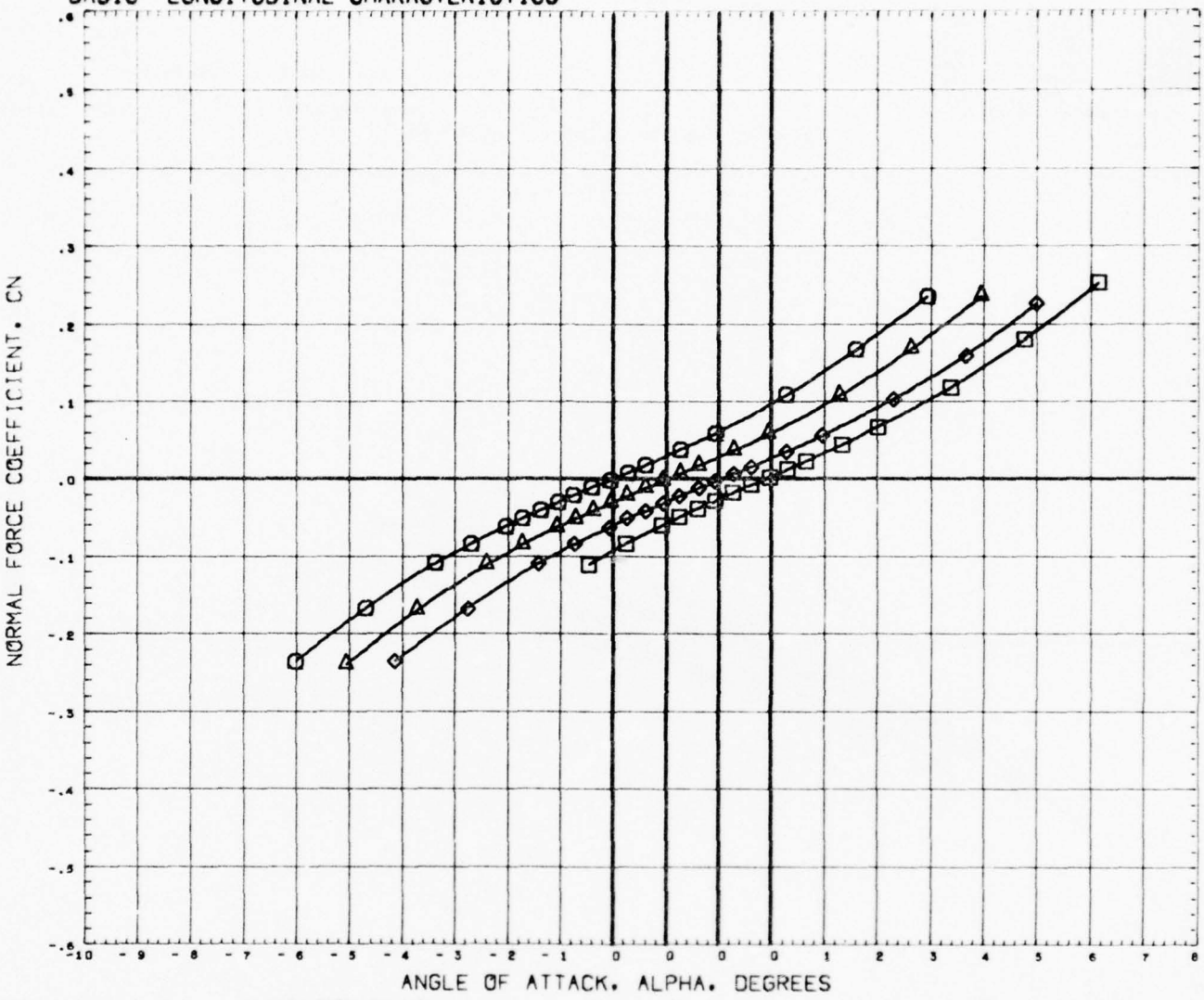
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	1.500
△	0.800	C-LGTH	5.000	C-DIA	0.400
◇	0.953				
□	1.003				

DATA MIST. CODE *G

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



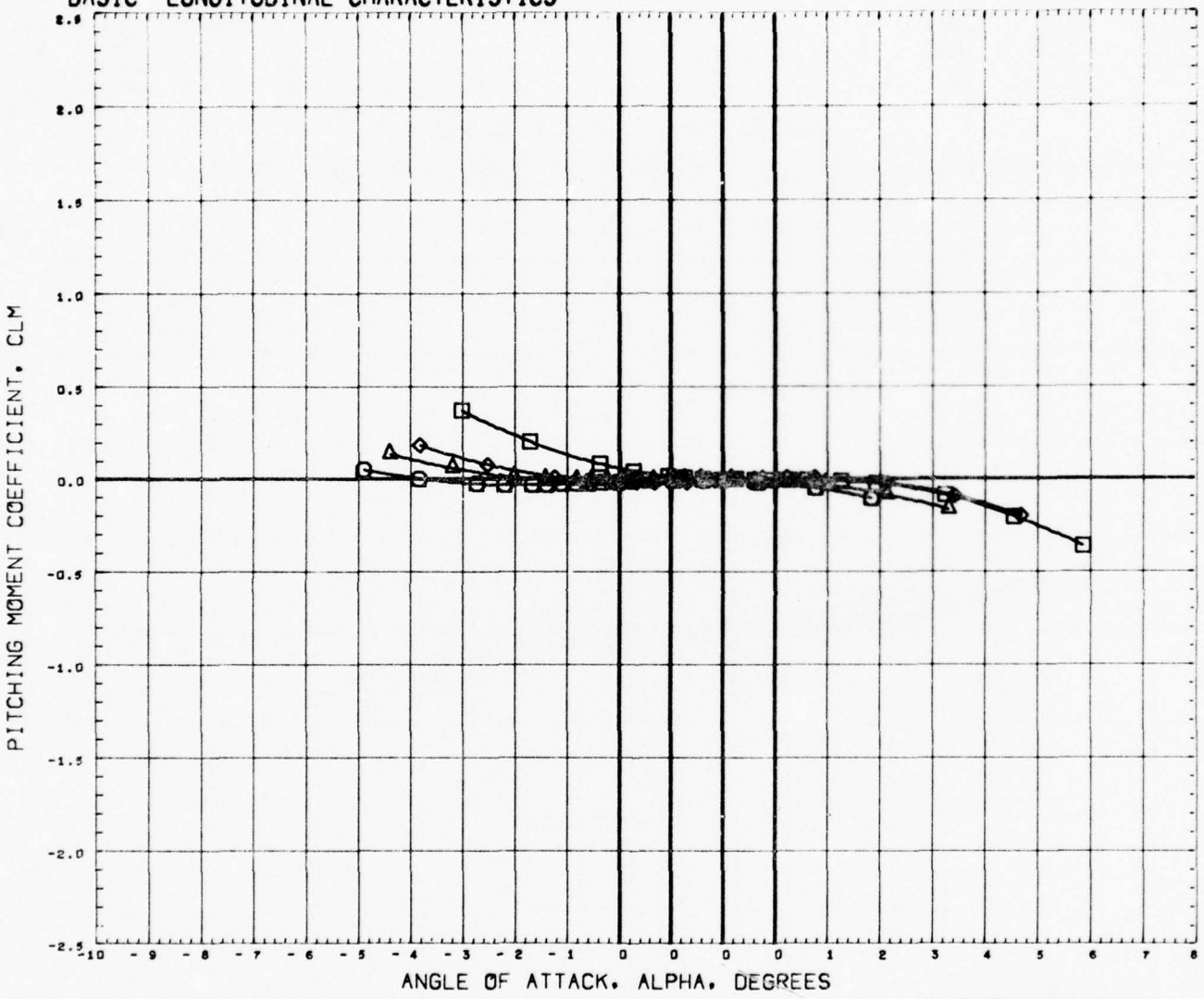
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.052	PHI	0.000	M-LGTH	1.500
△	1.100	C-LGTH	5.000	C-DIA	0.400
◇	1.199				
□	1.299				

DATA HIST. CODE #G

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



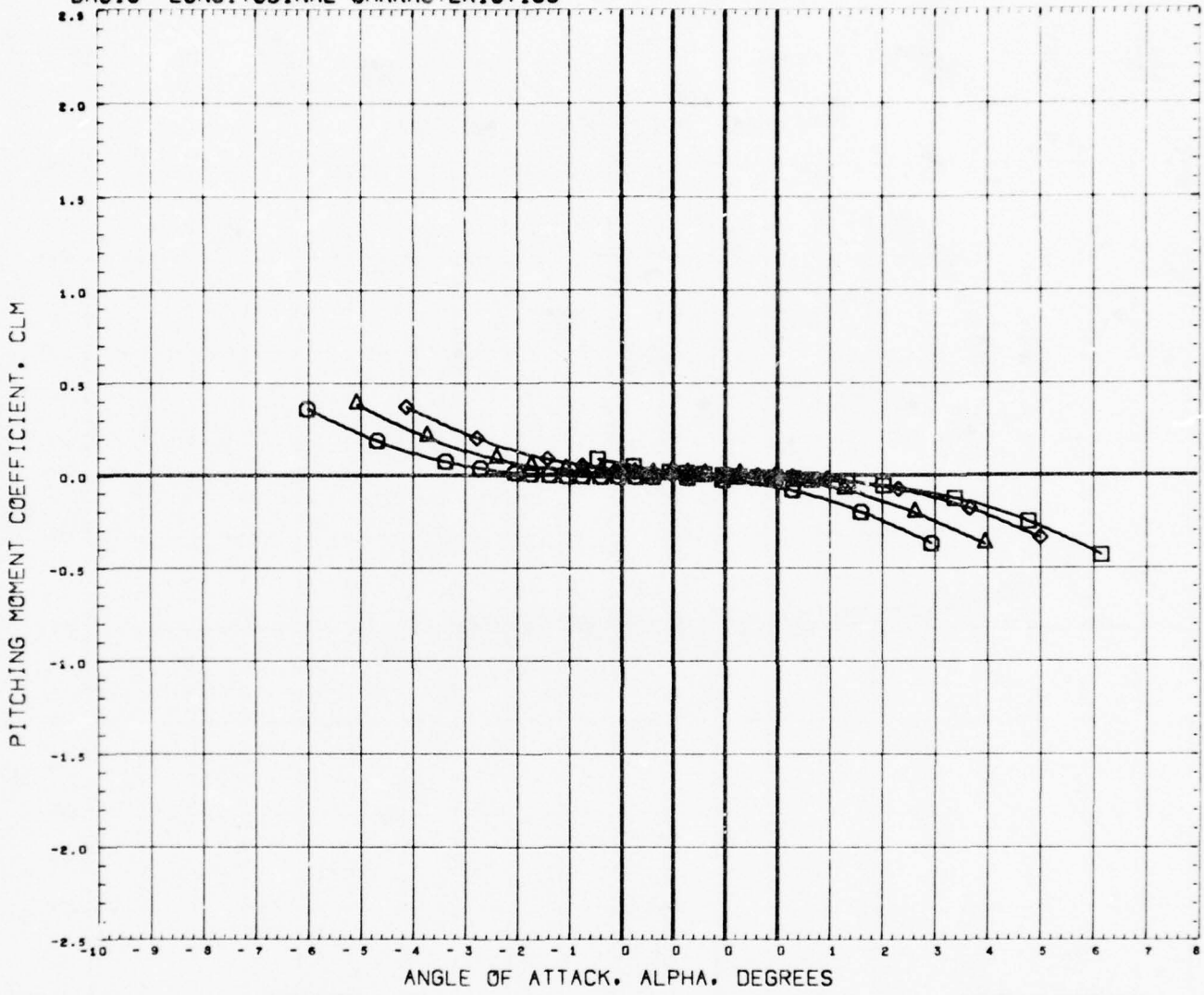
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	1.500
△	0.800	C-LGTH	5.000	C-DIA	0.400
◇	0.953				
□	1.003				

DATA HIST. CODE #6

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



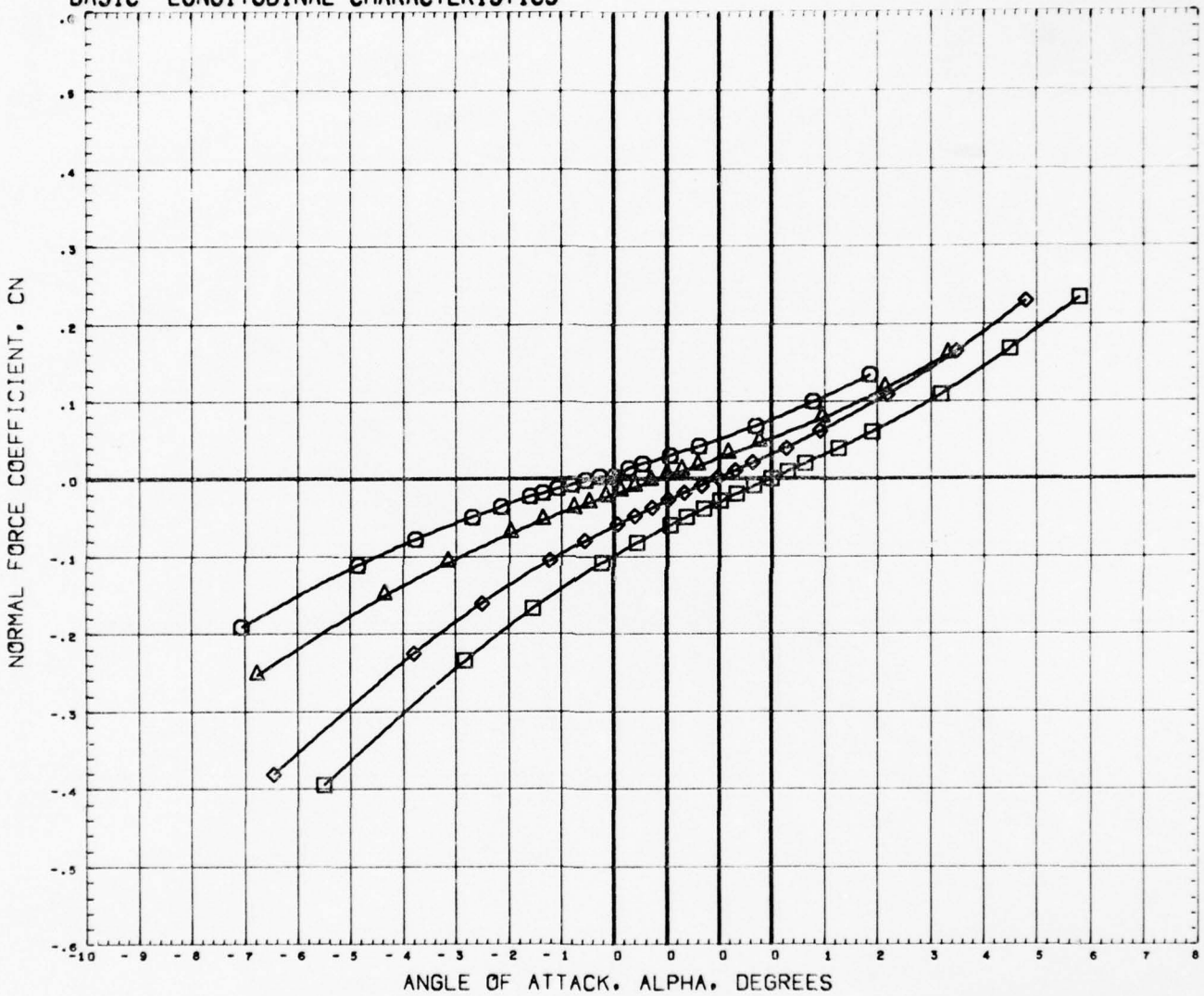
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.052	PHI	0.000	M-LGTH	1.500
△	1.100	C-LGTH	5.000	C-DIA	0.400
◇	1.199				
□	1.299				

DATA MIST. CODE *G

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



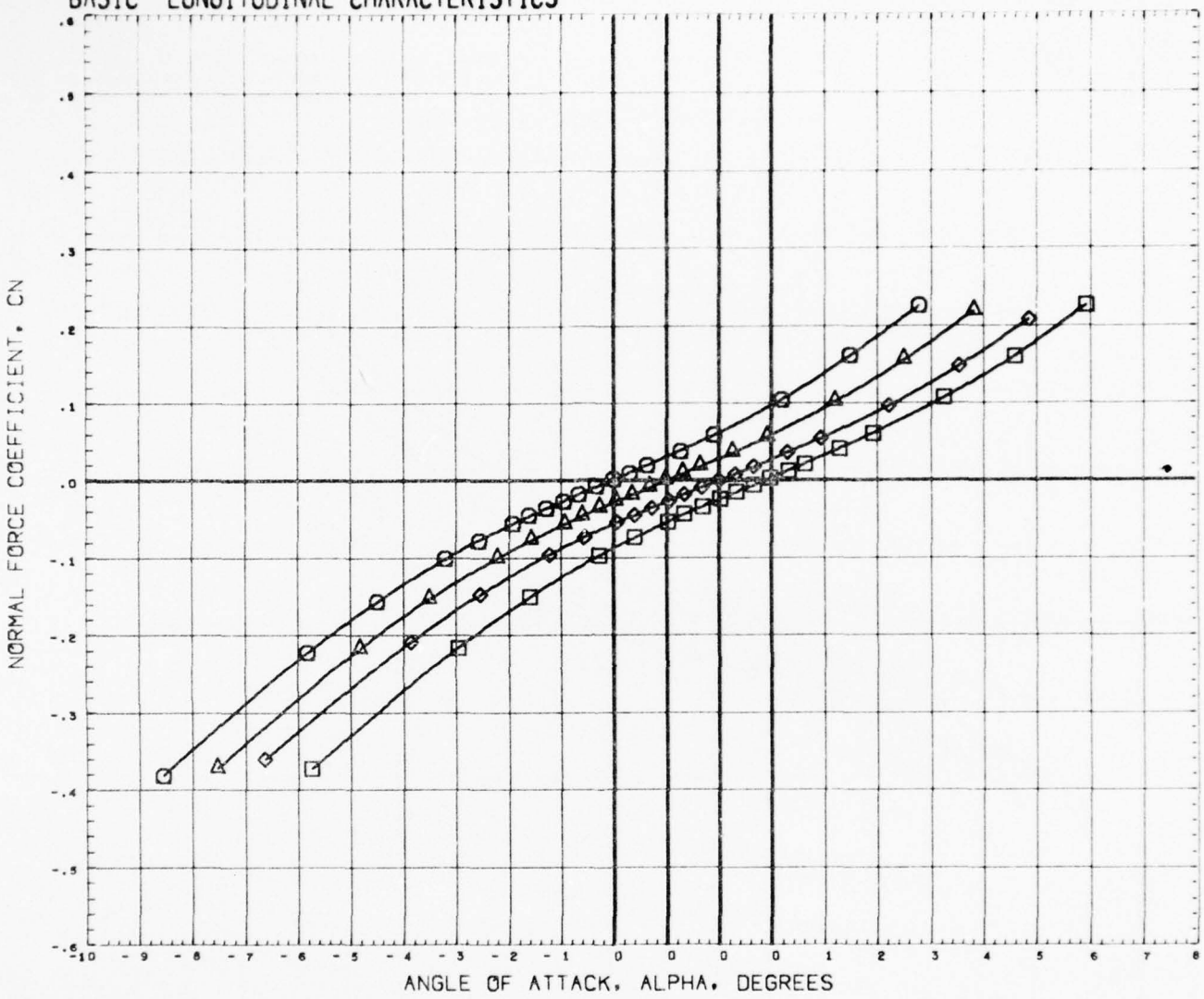
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.502	PHI	0.000	M-LGTH	0.750
△	0.801	C-LGTH	5.000	C-DIA	0.400
◇	0.950				
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



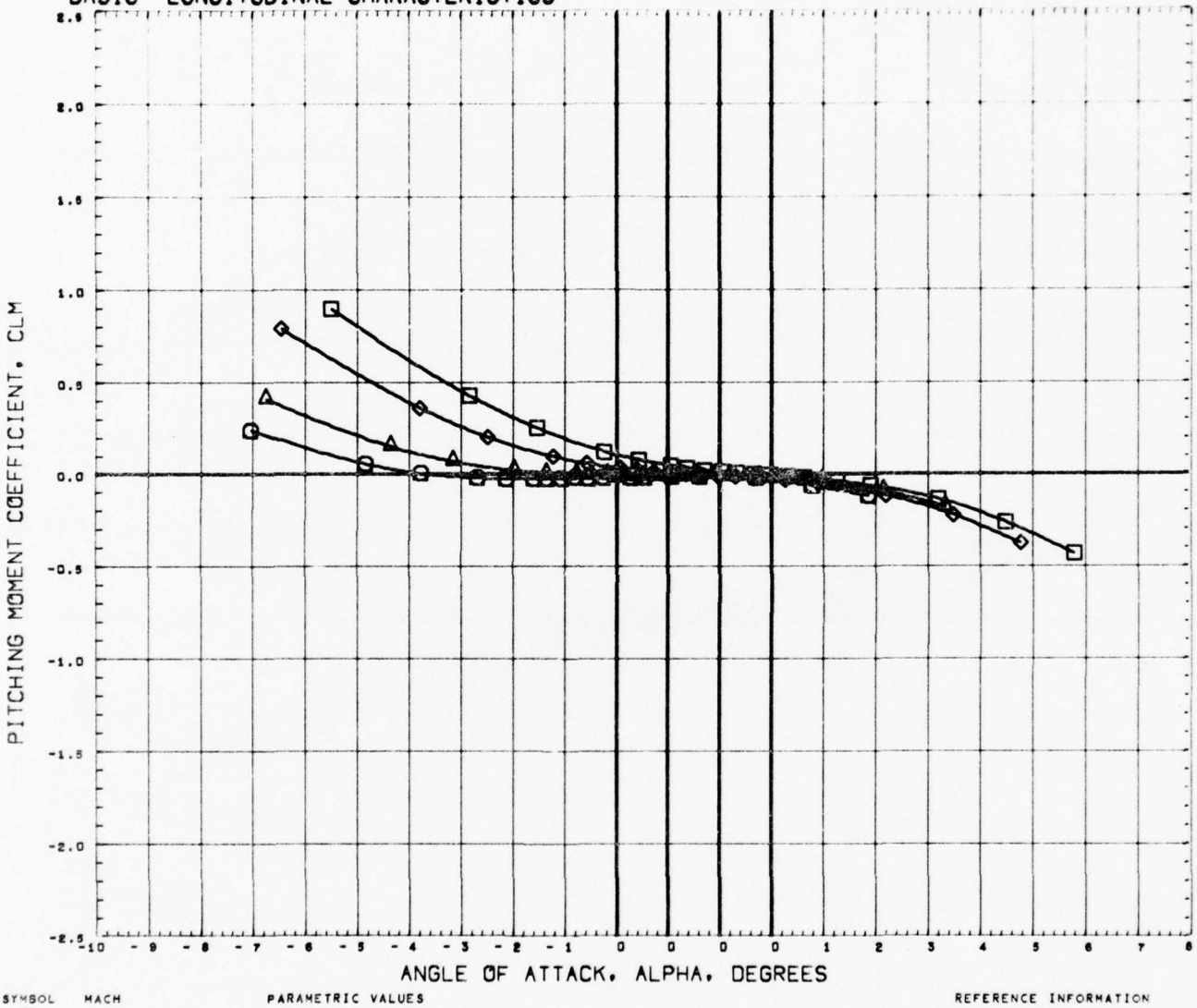
SYMBOL	MACH	PARAMETRIC VALUES			
○	1.048	PHI	0.000	M-LGTH	0.750
△	1.101	C-LGTH	5.000	C-DIA	0.400
◇	1.199				
□	1.301				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

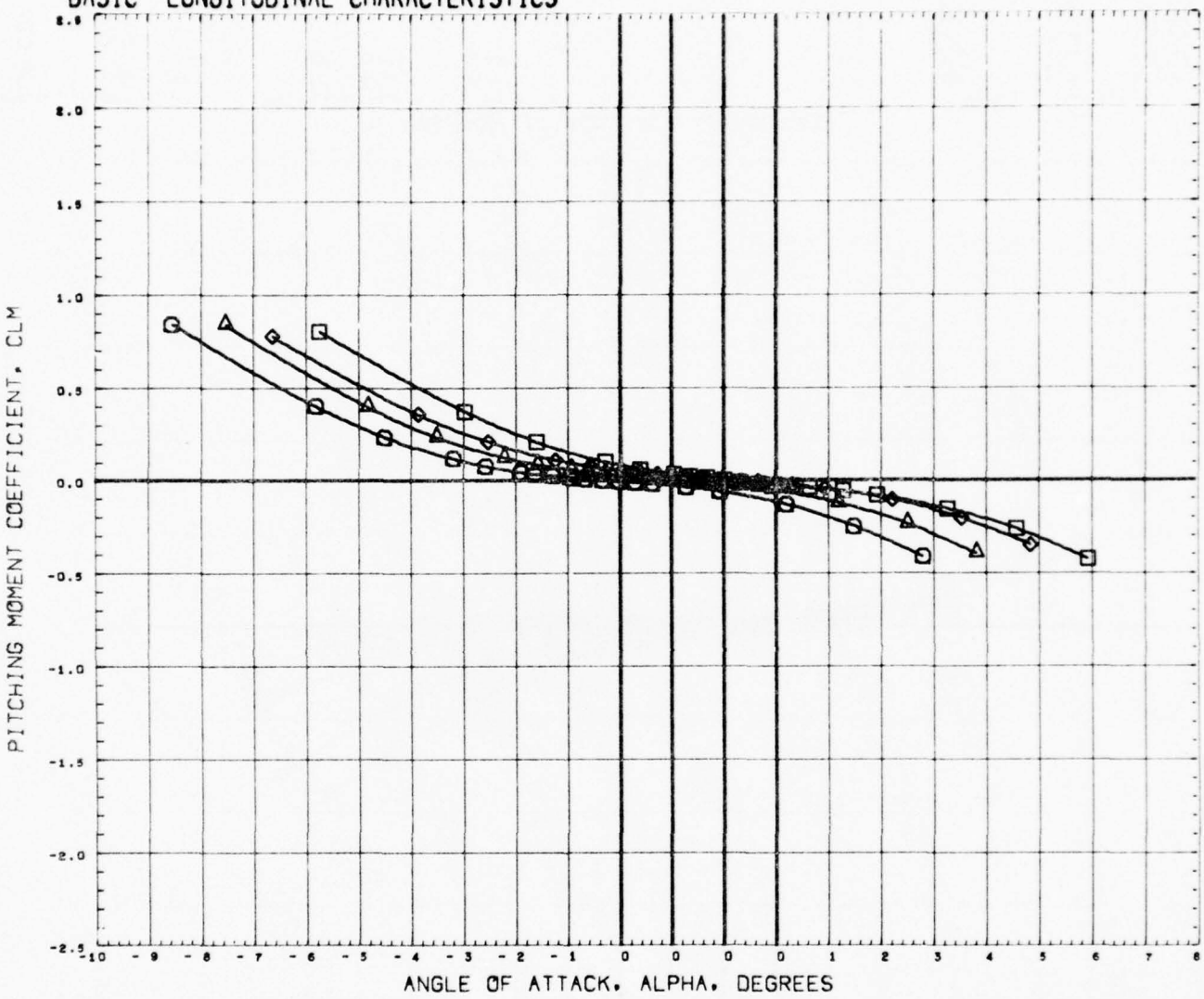


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.502	PHI	0.000	M-LGTH	0.750
△	0.801	C-LGTH	5.000	C-DIA	0.400
◇	0.950				
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

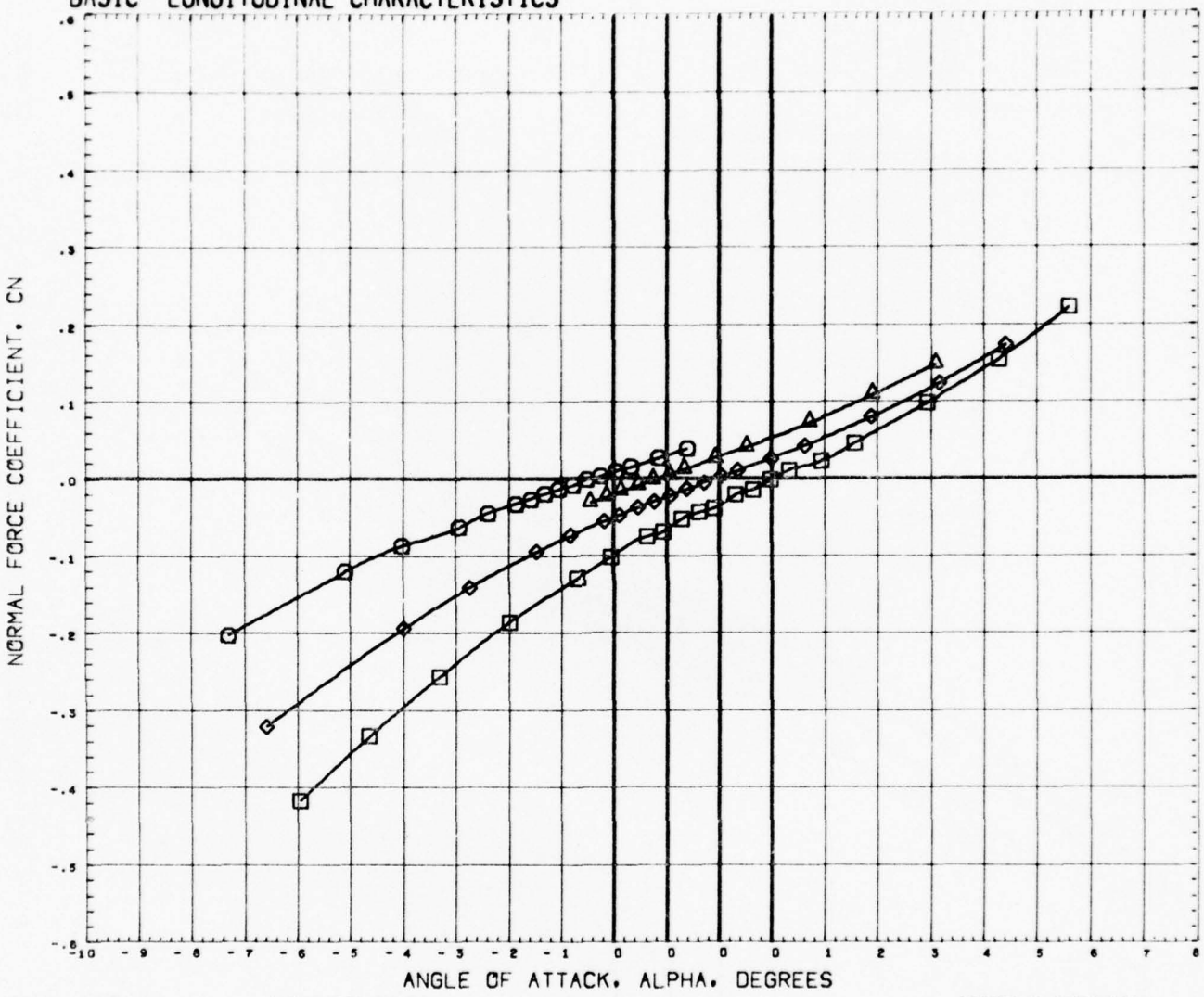


SYMBOL	MACH	PARAMETRIC VALUES			
○	1.046	PHI	0.000	M-LGTH	0.750
△	1.101	C-LGTH	5.000	C-DIA	0.400
◇	1.199				
□	1.301				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

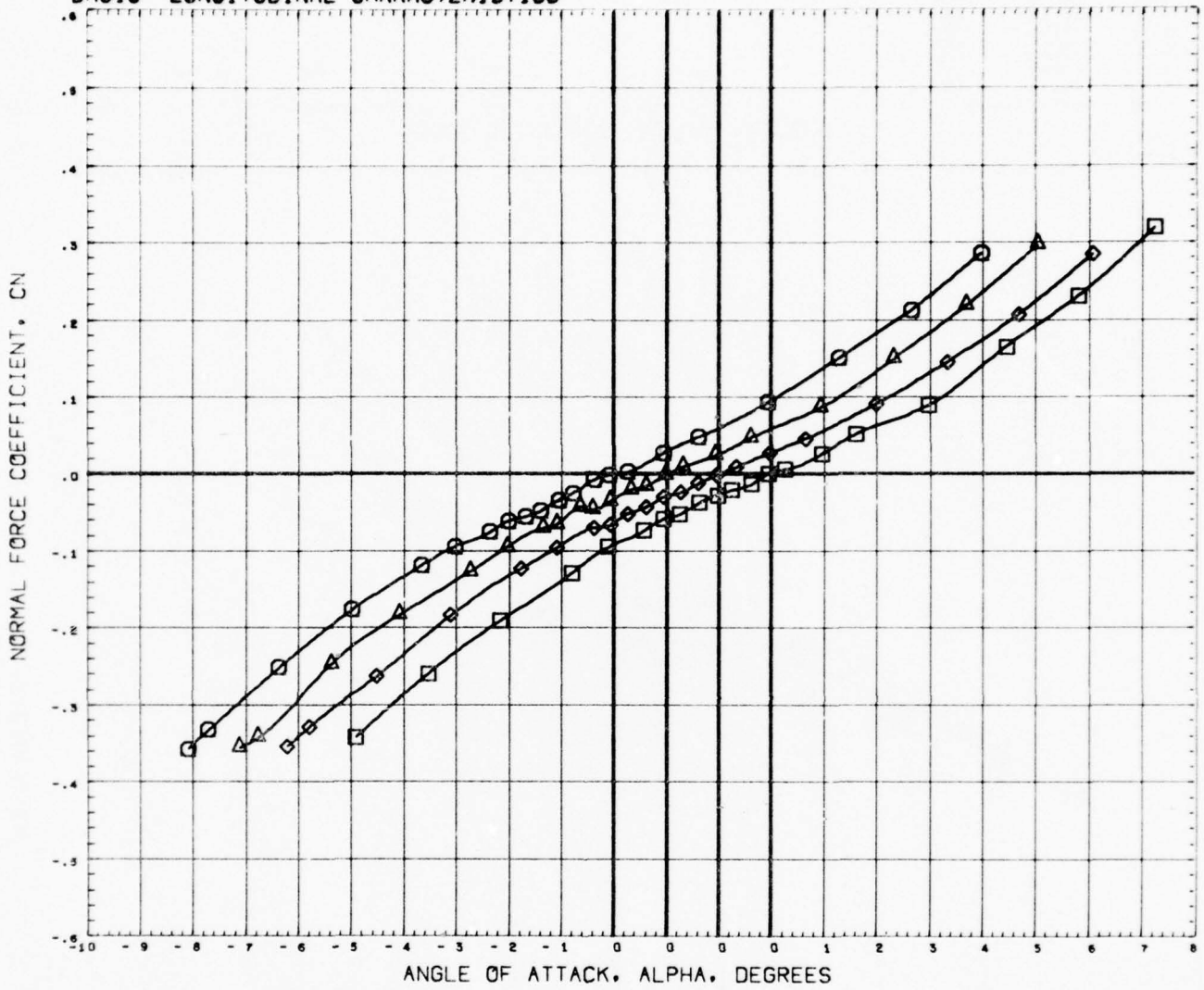


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.797	C-LGTH	5.000	C-DIA	0.400
◇	0.947				
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

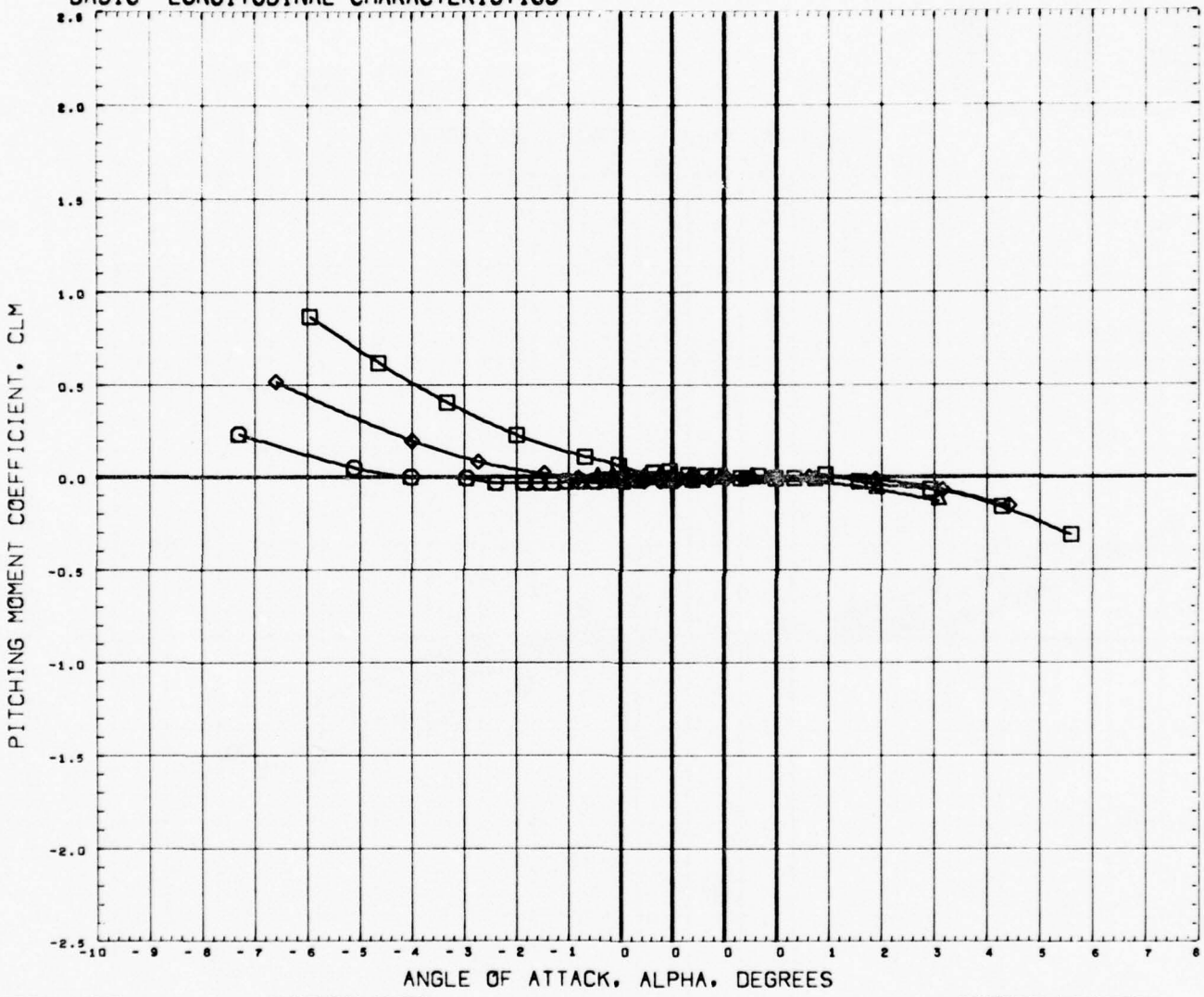


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.048	PHI	0.000	M-LGTH	1.500
△	1.099	C-LGTH	5.000	C-DIA	0.400
◇	1.199				
□	1.300				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



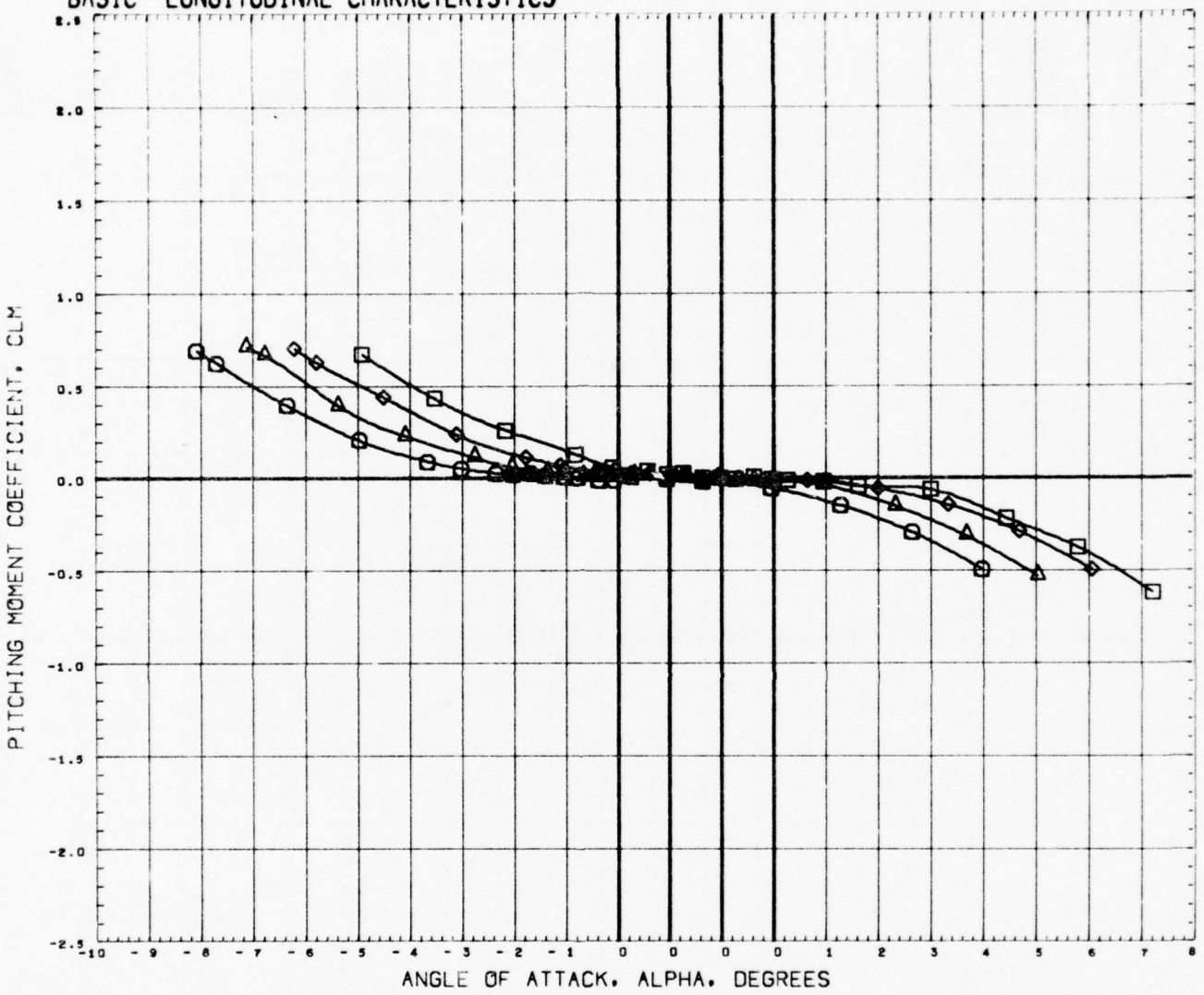
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.797	C-LGTH	5.000	C-DIA	0.400
◇	0.947				
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

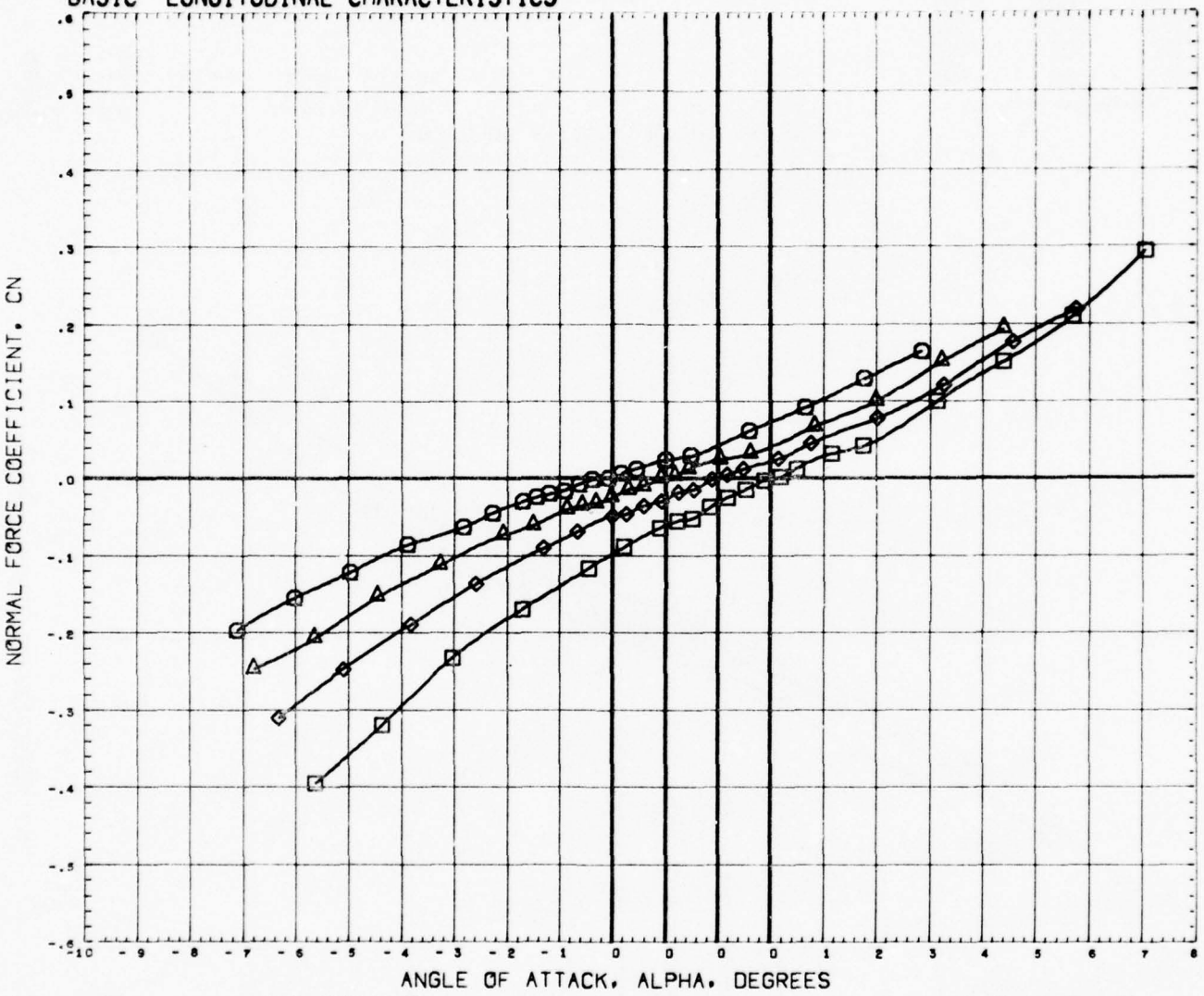


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.048	PHI	0.000	M-LGTH	1.500
△	1.099	C-LGTH	5.000	C-DIA	0.400
◇	1.199				
□	1.300				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

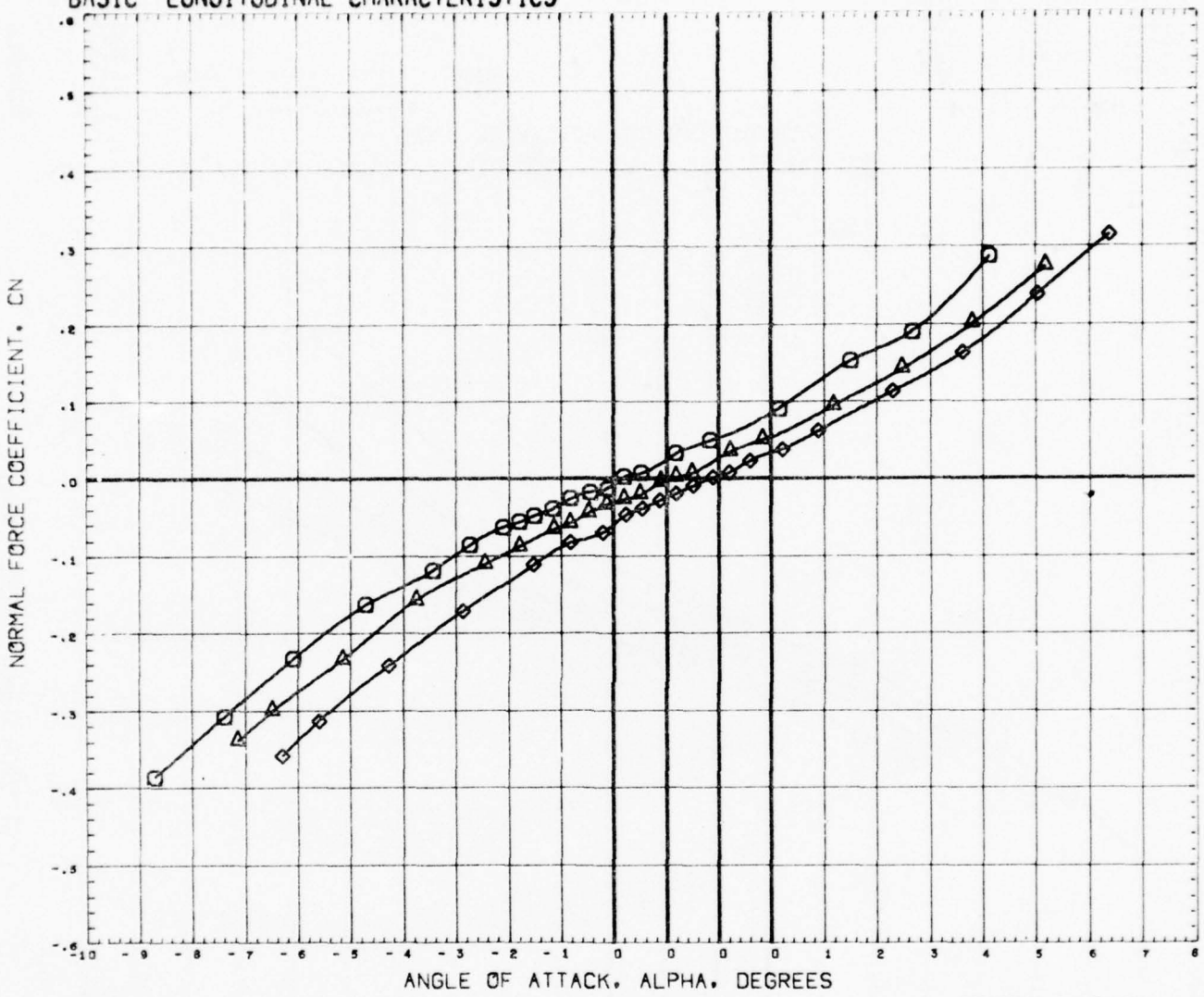


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	C-LGTH	5.000	C-DIA	0.500
◇	0.948				
□	0.999				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

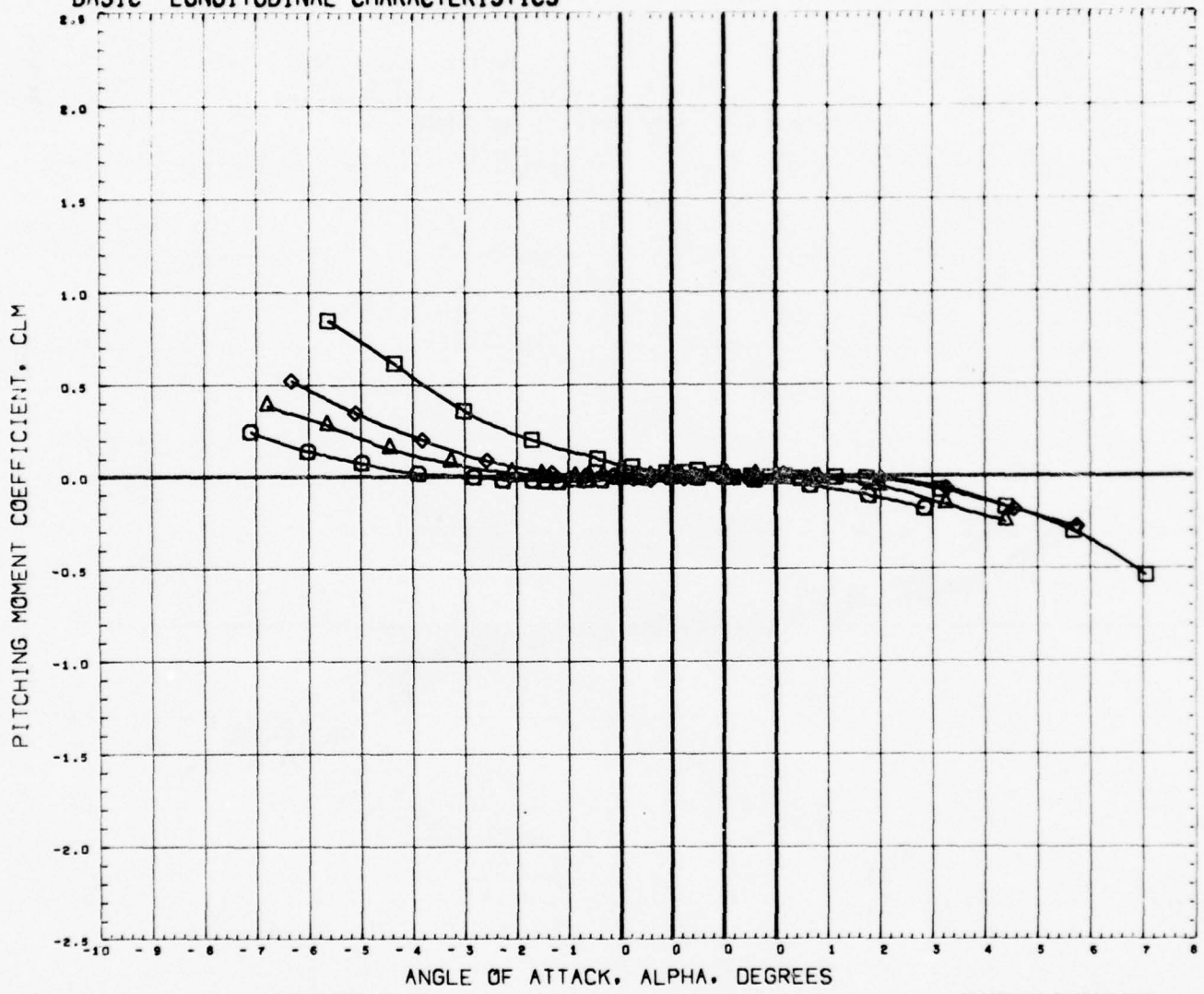


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.104	PHI	0.000	M-LGTH	1.500
△	1.199	C-LGTH	5.000	C-DIA	0.500
◇	1.299				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

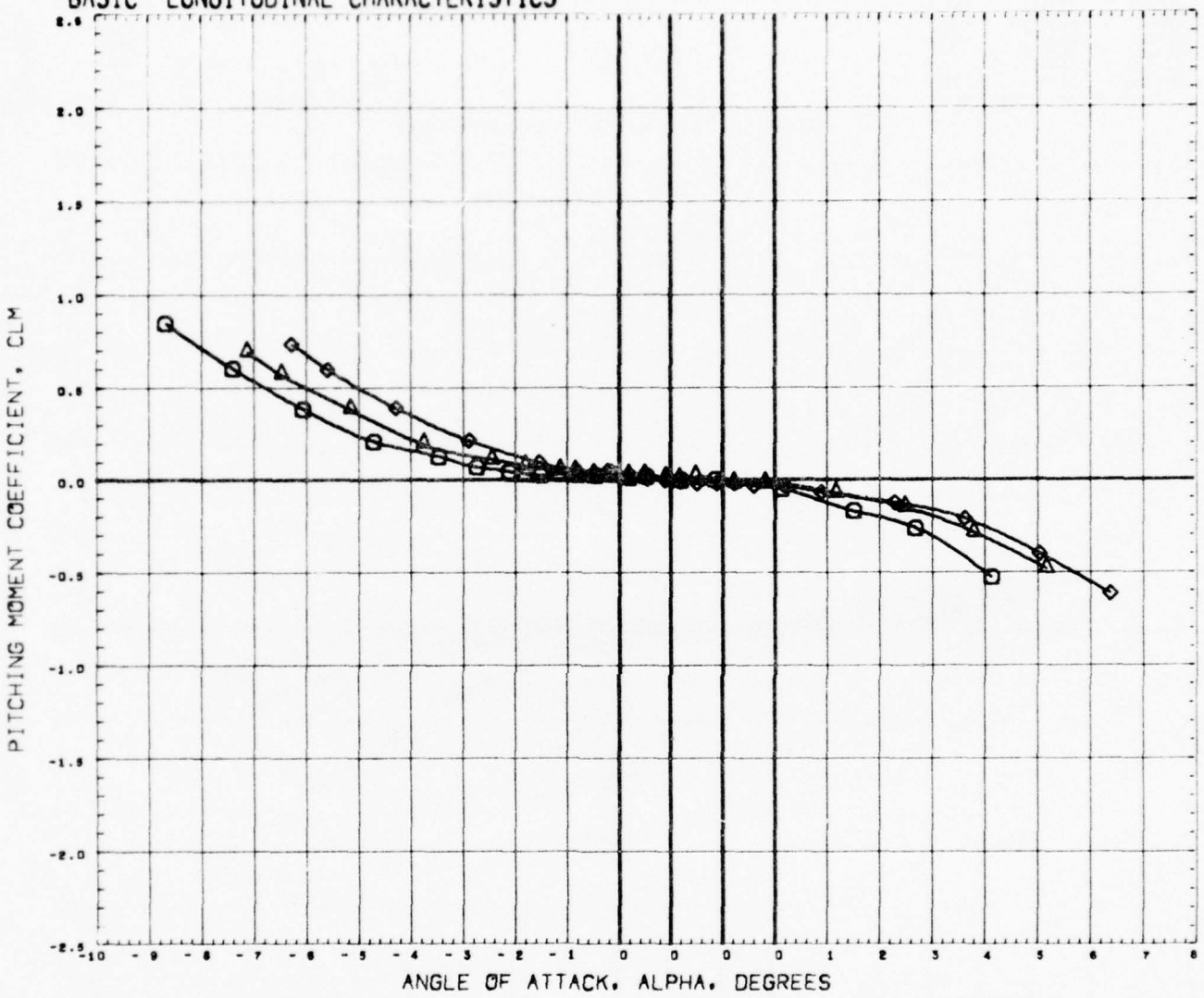


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	C-LGTH	5.000	C-DIA	0.500
◇	0.948				
□	0.999				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.104	PHI	0.000	M-LGTH	1.500
△	1.199	C-LGTH	5.000	C-DIA	0.500
◇	1.299				

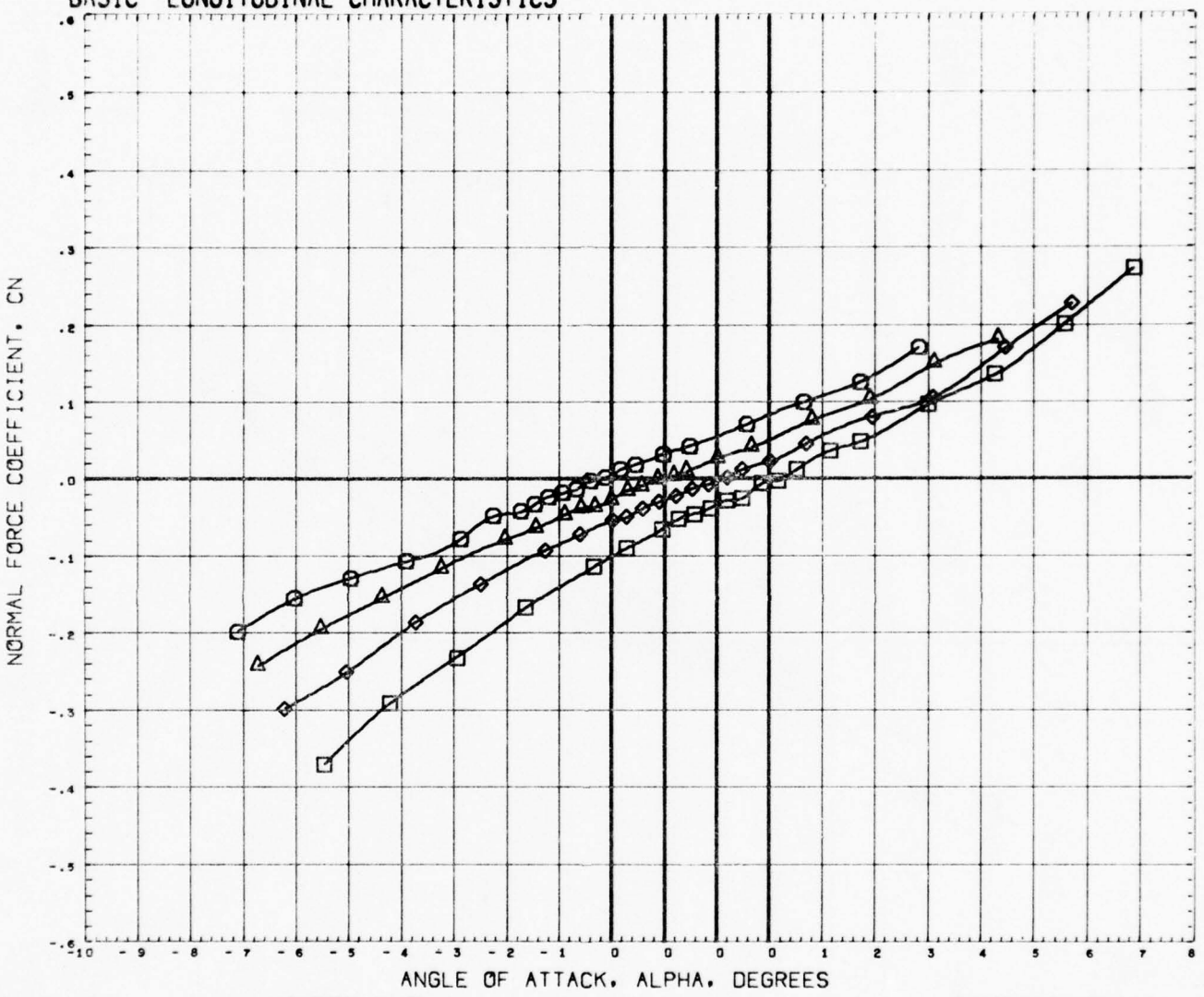
REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

REFERENCE FILE

AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C2 (RTAM10) 10 MAR 72 PAGE 36

BASIC LONGITUDINAL CHARACTERISTICS



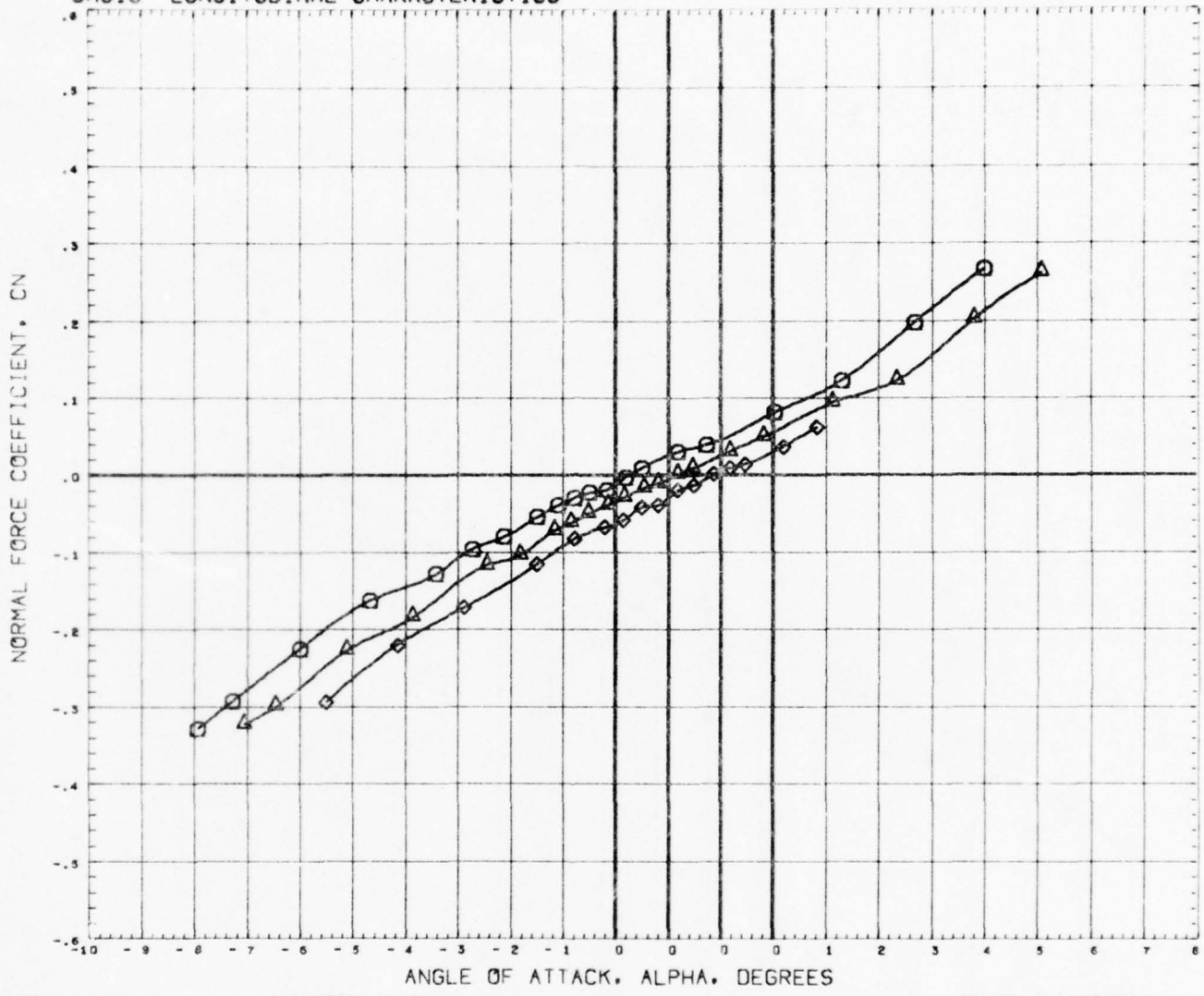
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	C-LGTH	5.000	C-DIA	0.670
◇	0.953				
□	0.999				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



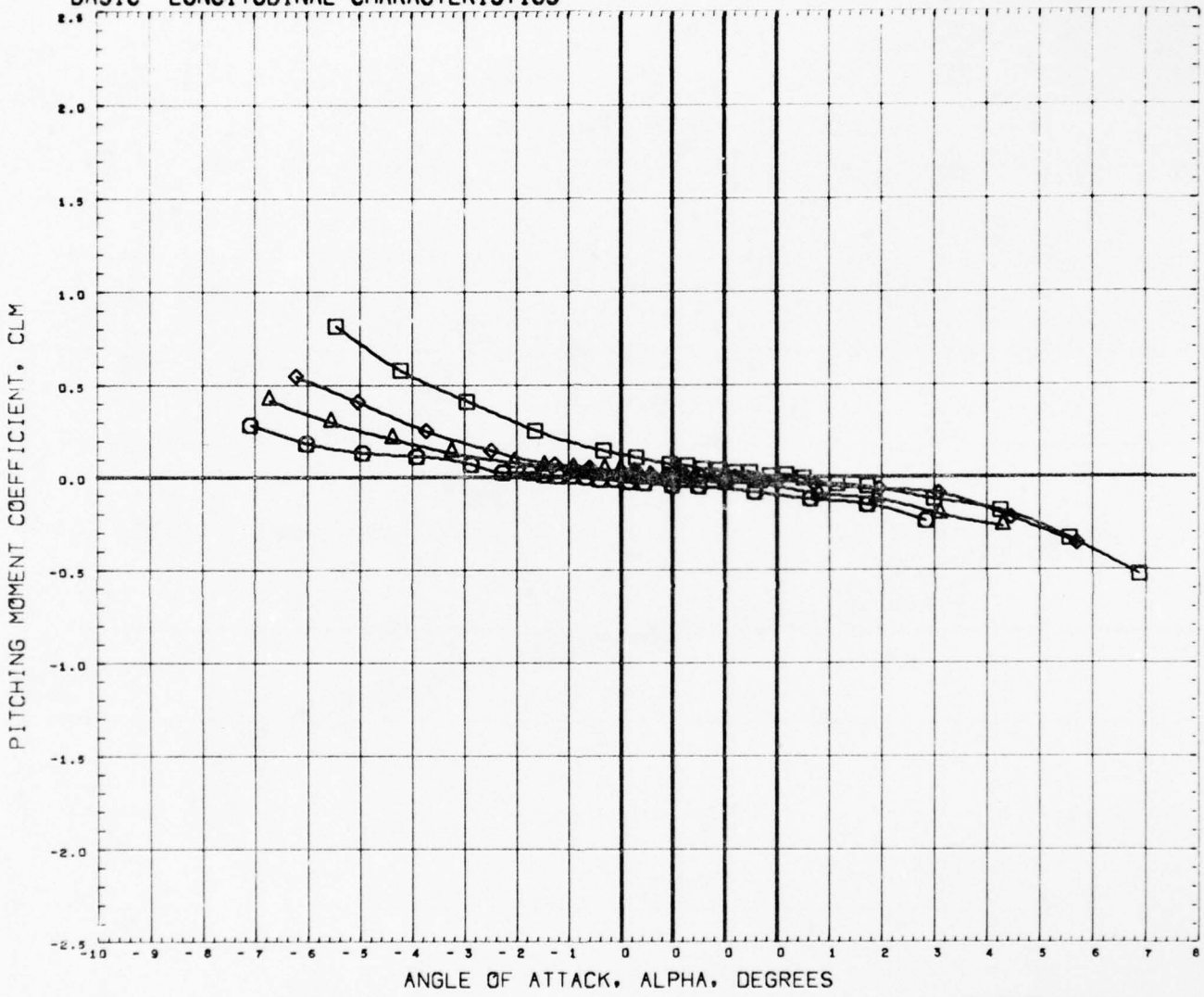
SYMBOL	MACH	PARAMETRIC VALUES			
○	1.099	PHI	0.000	M-LGTH	1.500
△	1.197	C-LGTH	5.000	C-DIA	0.670
◇	1.295				

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

REFERENCE FILE

BASIC LONGITUDINAL CHARACTERISTICS

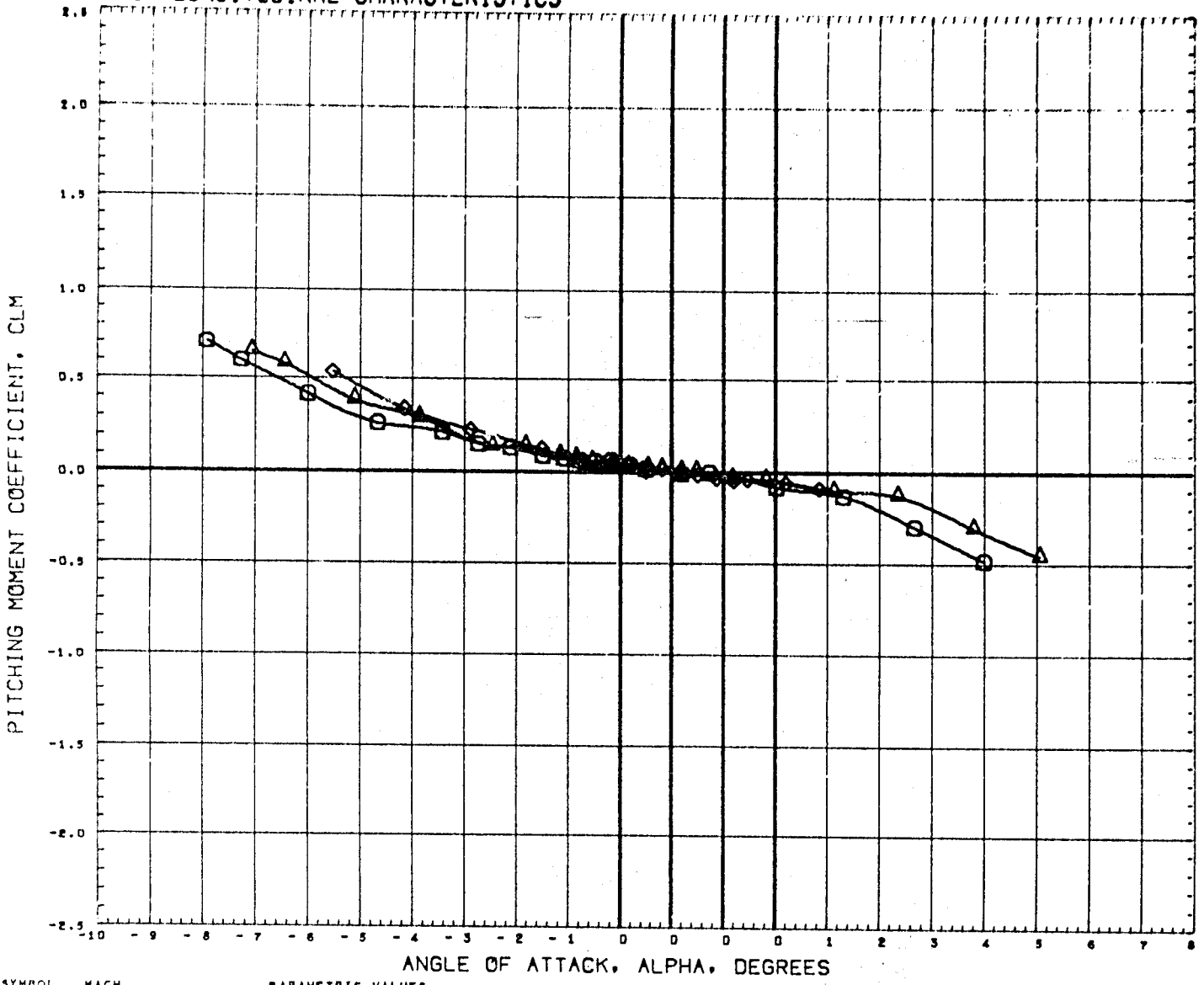


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	C-LGTH	5.000	C-DIA	0.670
◇	0.953				
□	0.999				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

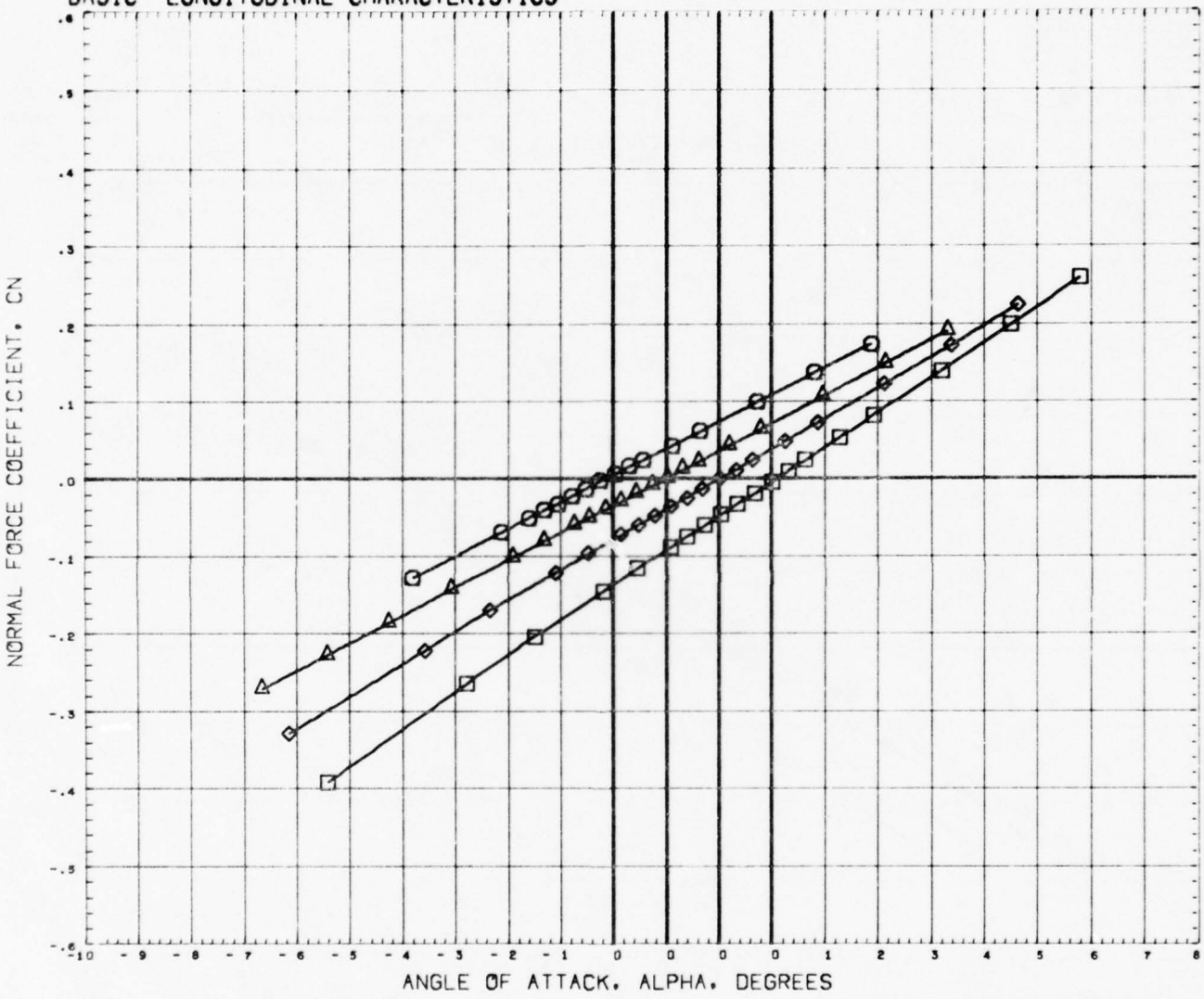


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.099	PHI	0.000	M-LGTH	1.500
△	1.197	C-LGTH	5.000	C-DIA	0.670
◇	1.295				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH
○	0.500
△	0.799
◇	0.948
□	1.000

PARAMETRIC VALUES

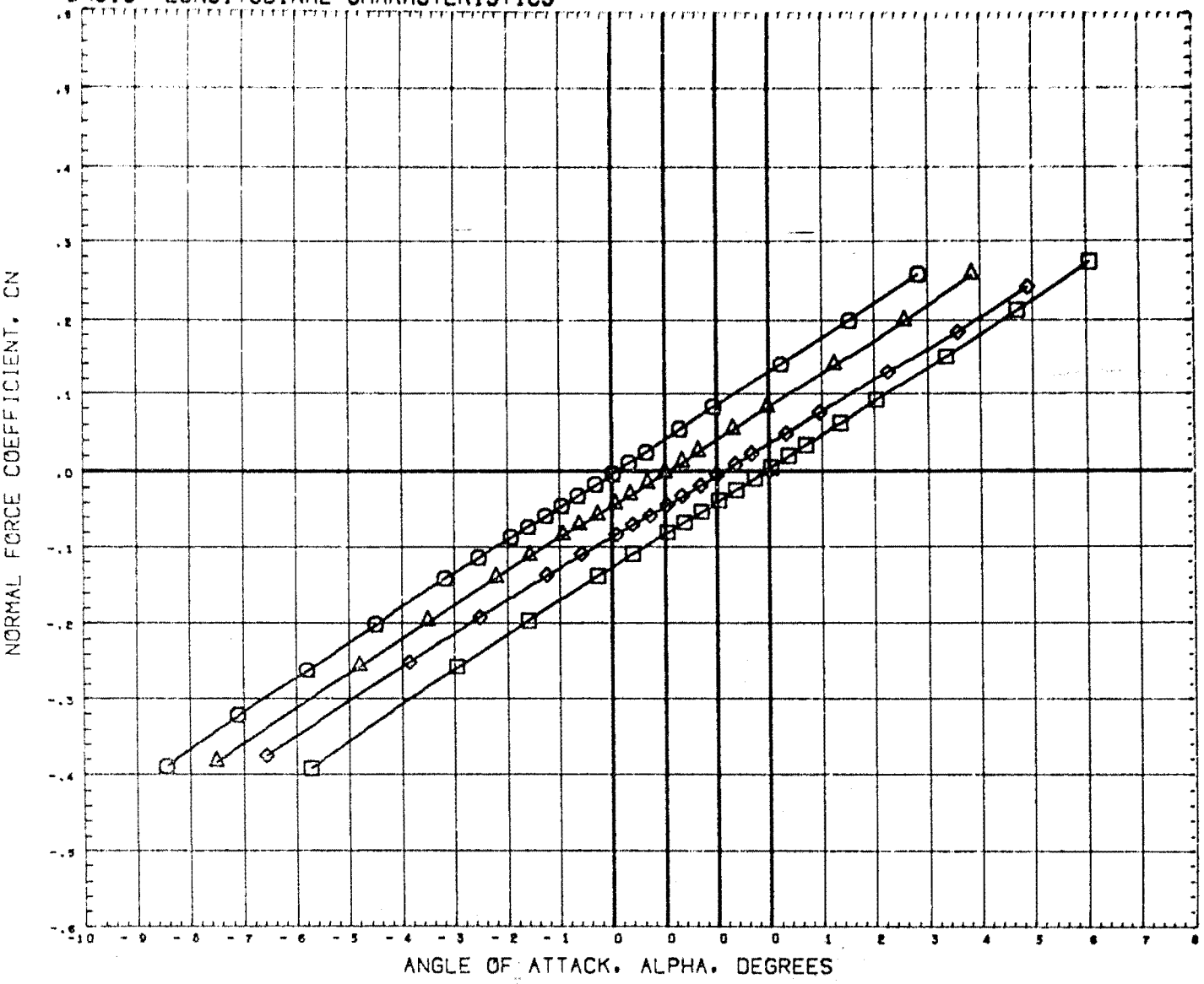
PHI	0.000	M-LGTH	1.500
C-LGTH	5.000	C-DIA	0.400

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

REFERENCE FILE

BASIC LONGITUDINAL CHARACTERISTICS

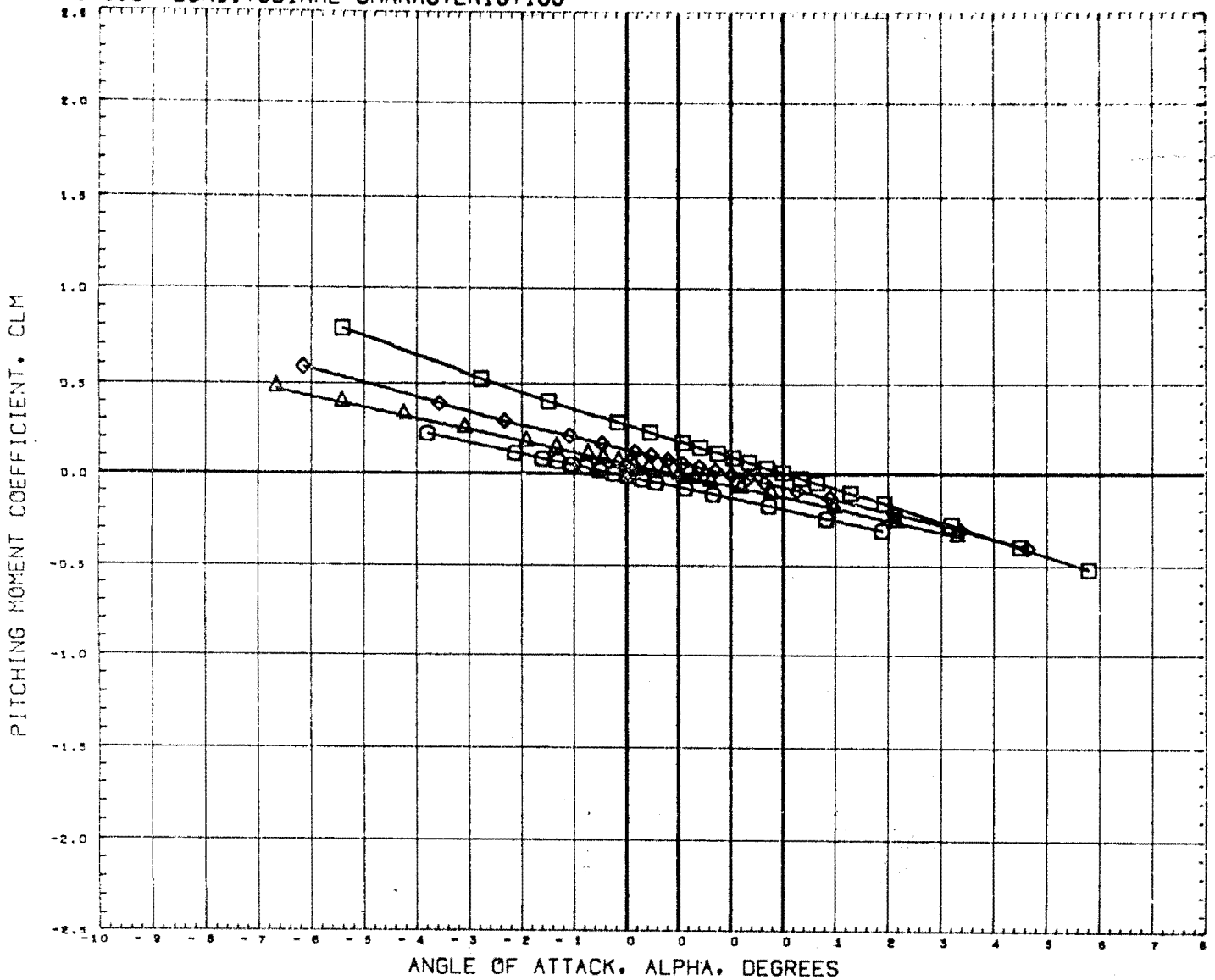


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.052	PHI	0.000	M-LGTH	1.500
△	1.103	C-LGTH	5.000	C-DIA	0.400
◇	1.200				
□	1.300				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



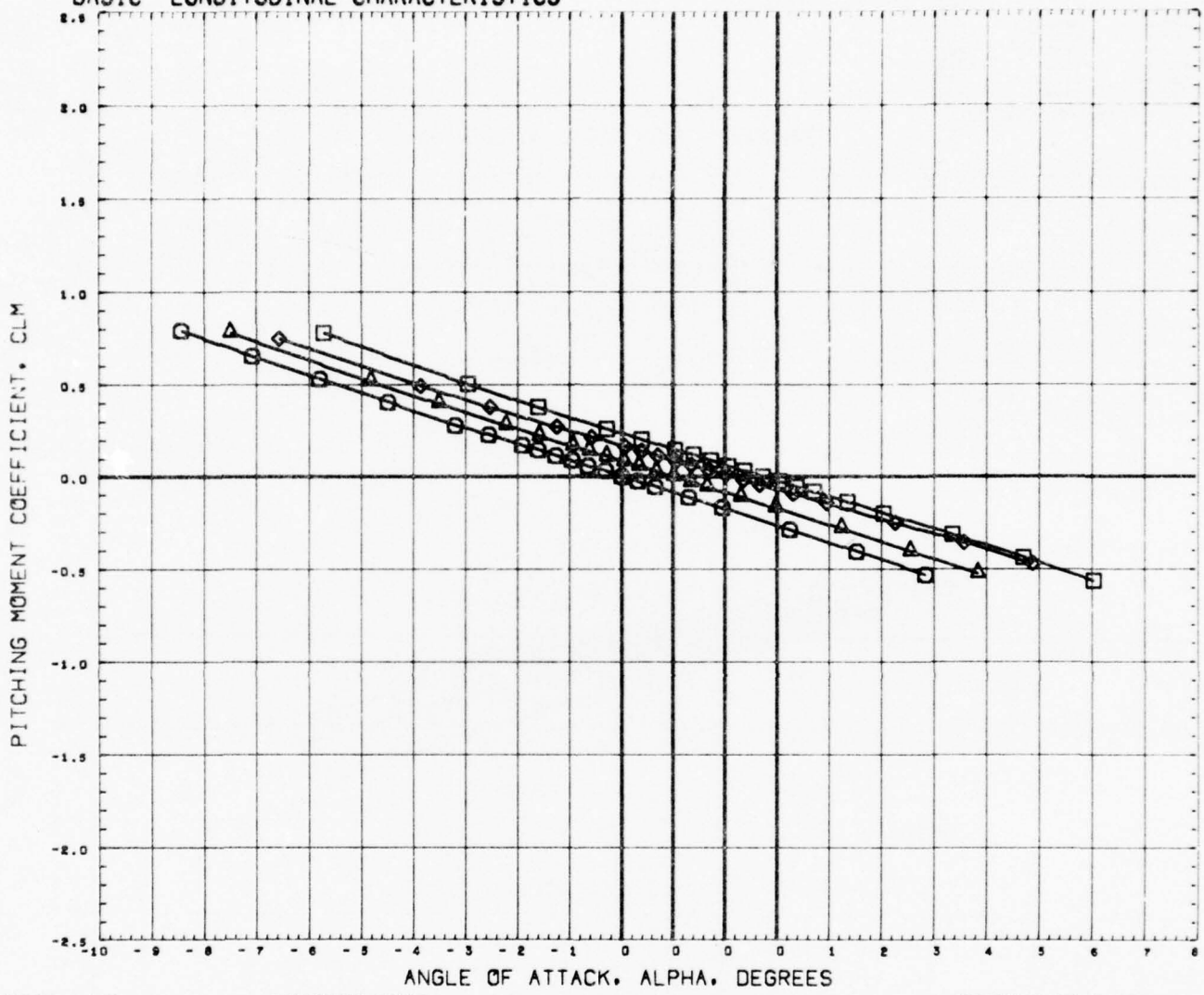
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.799	C-LGTH	5.000	C-DIA	0.400
◇	0.948				
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

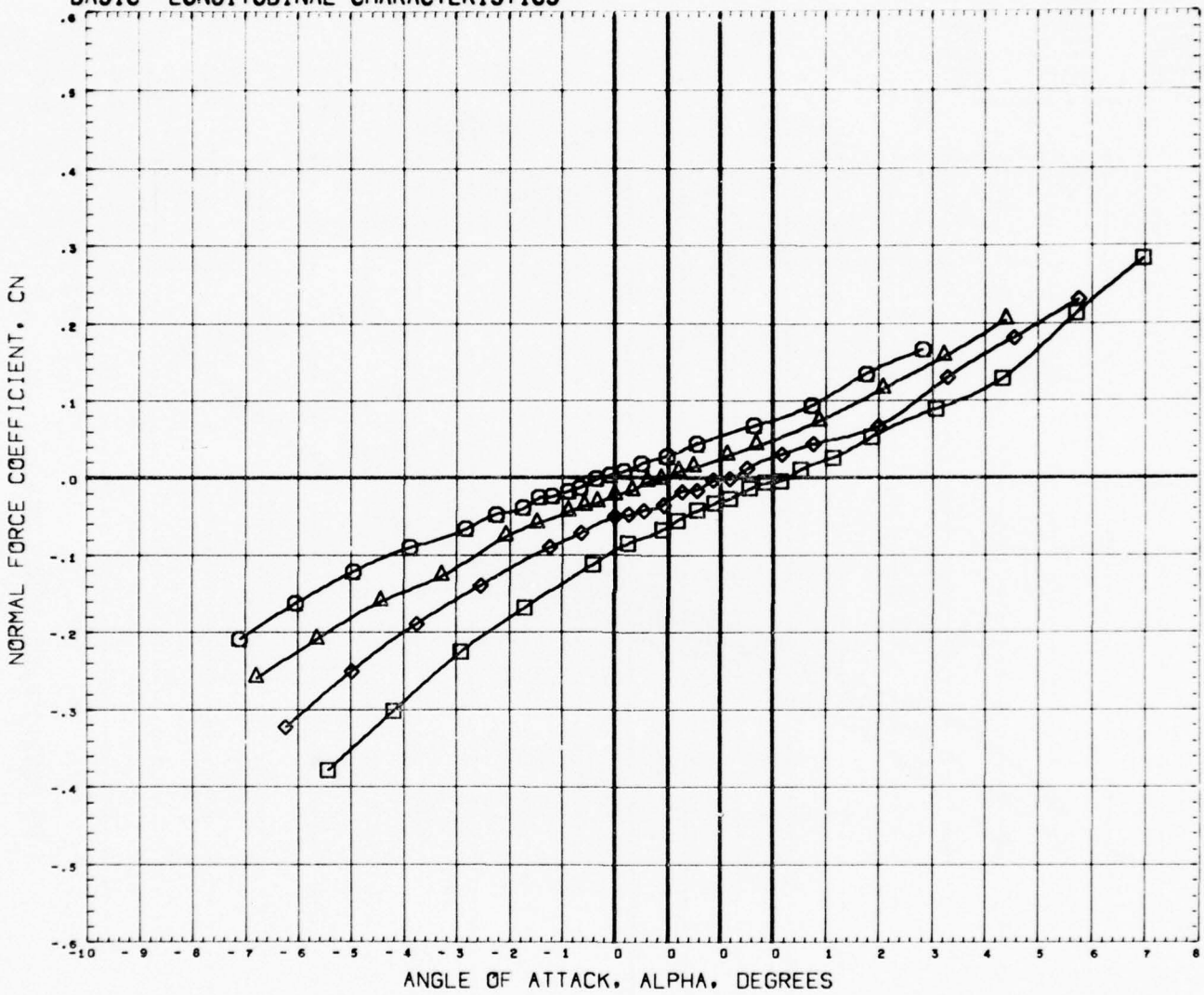


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.052	PHI	0.000	M-LGTH	1.500
△	1.103	C-LGTH	5.000	C-DIA	0.400
◇	1.200				
□	1.300				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



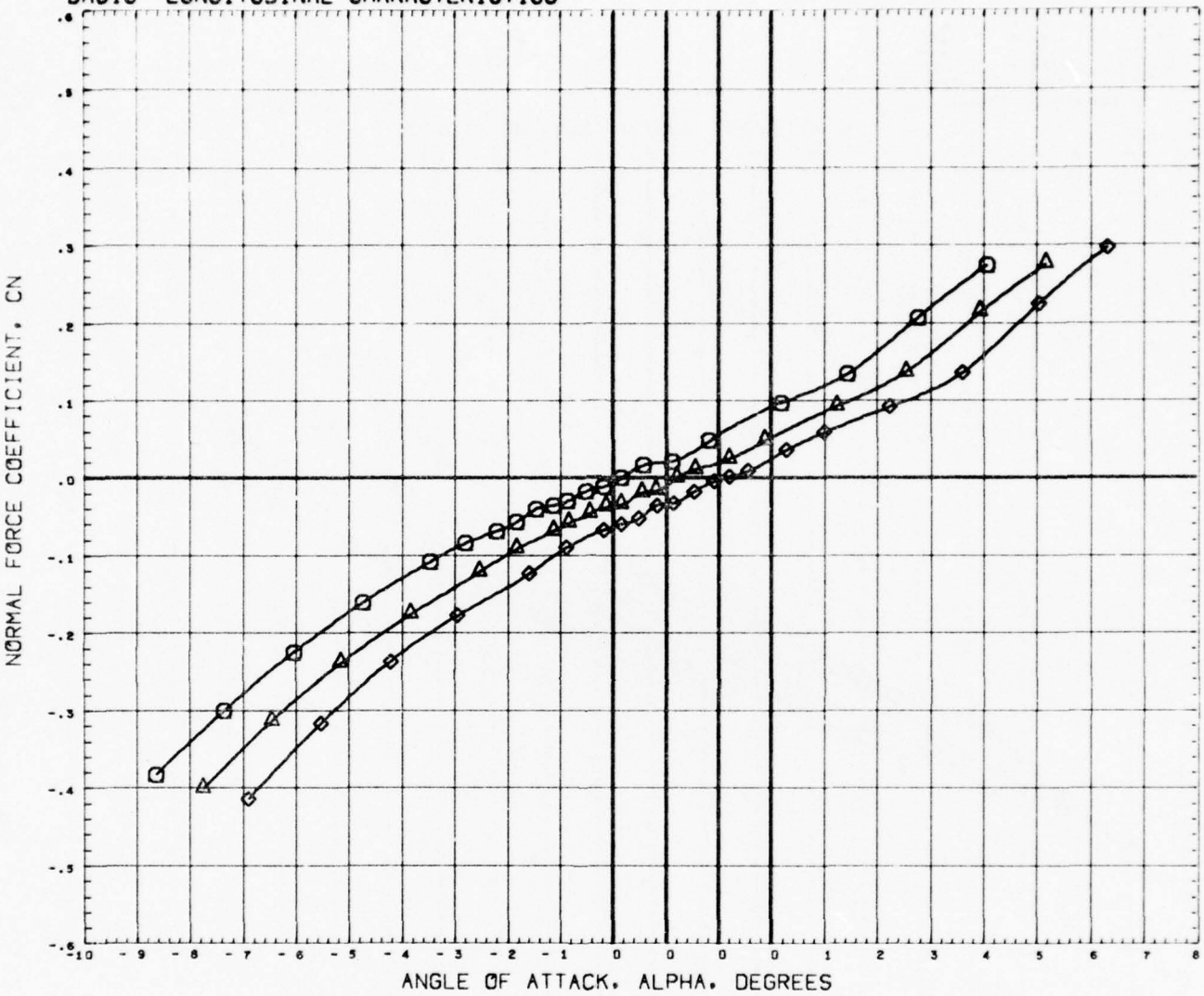
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	2.250
△	0.801	C-LGTH	6.500	C-DIA	0.500
◇	0.949				
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



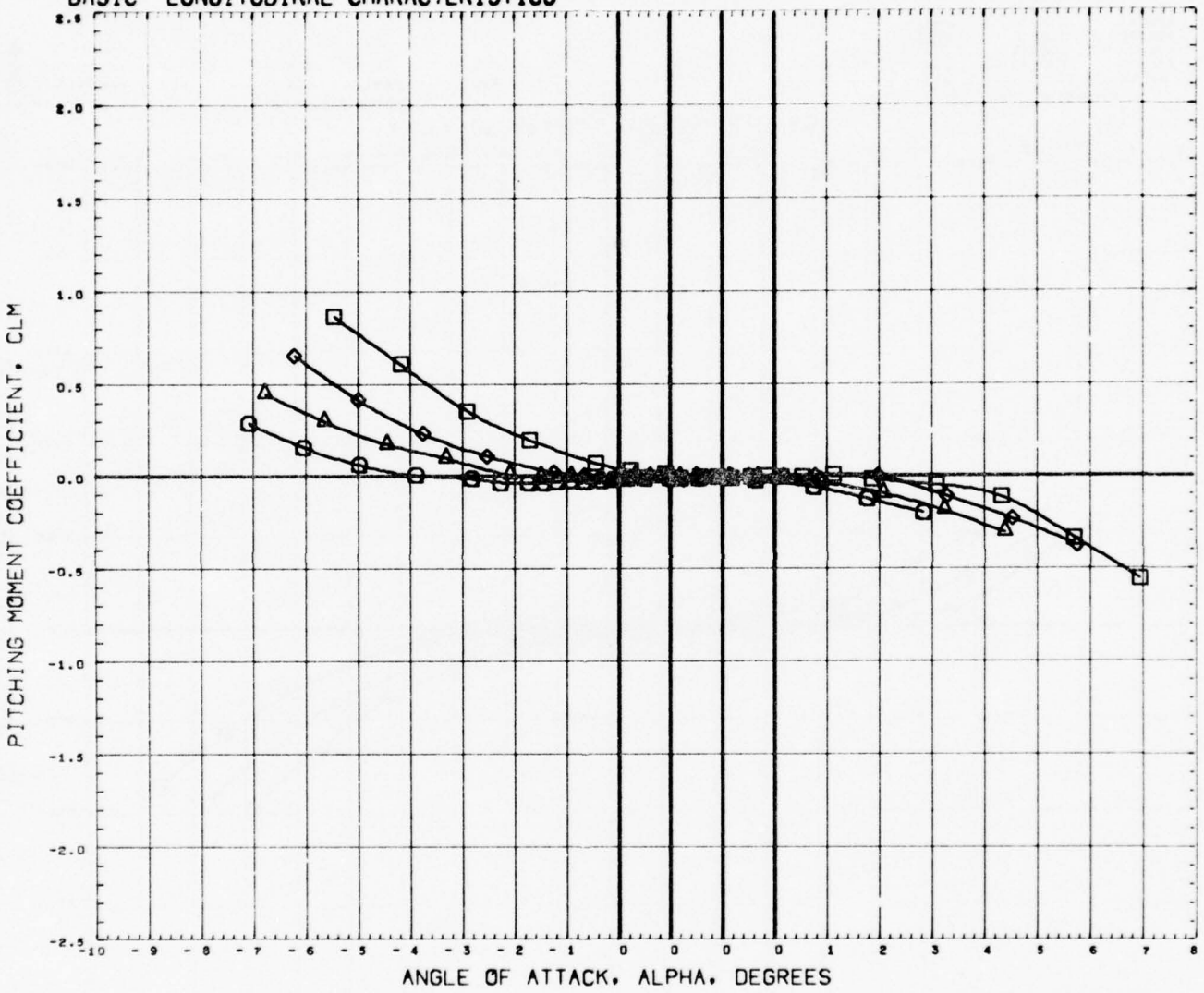
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.099	PHI	0.000	M-LGTH	2.250
△	1.198	C-LGTH	6.500	C-DIA	0.500
◇	1.297				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

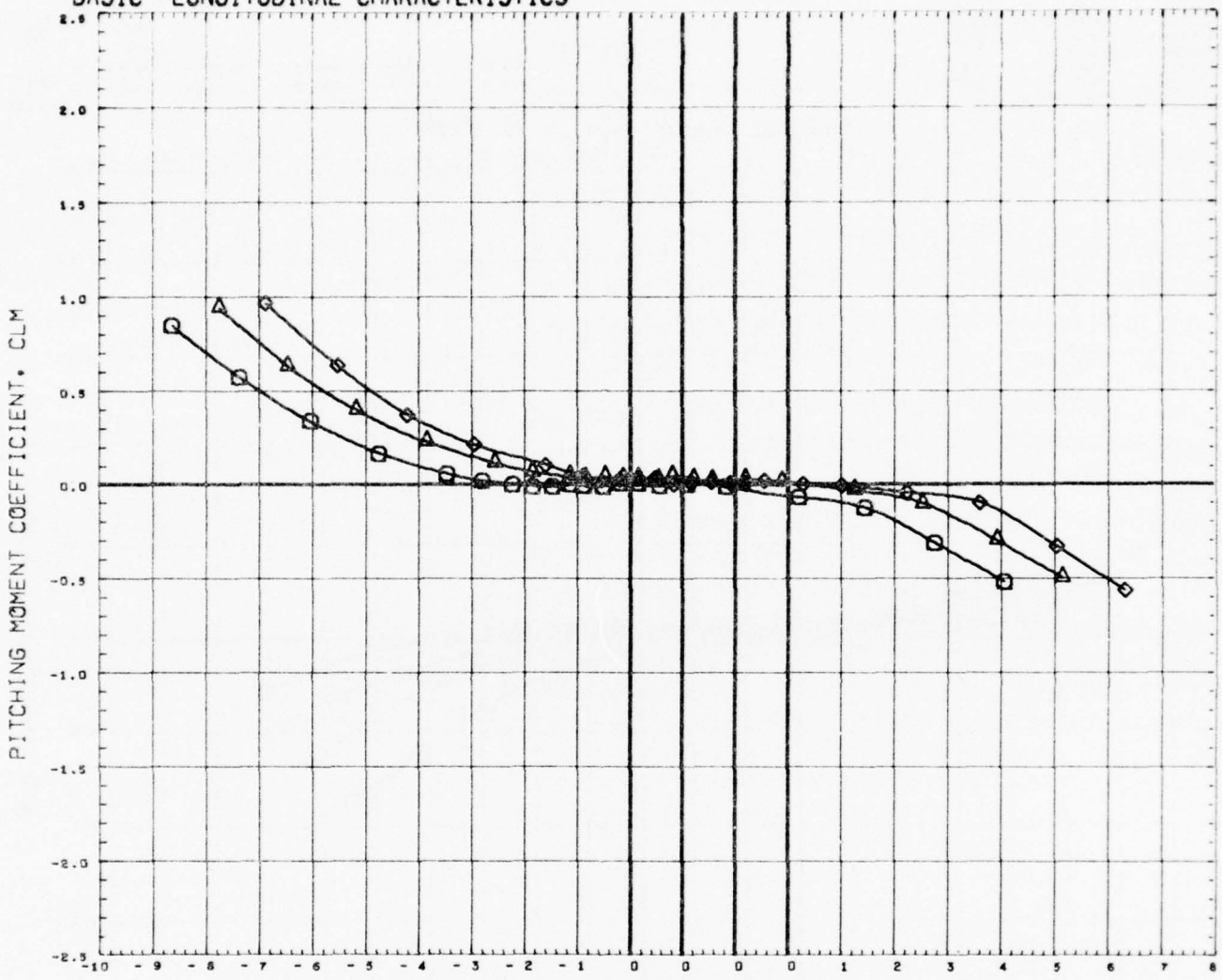


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	2.250
△	0.801	C-LGTH	6.500	C-DIA	0.500
◇	0.949				
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

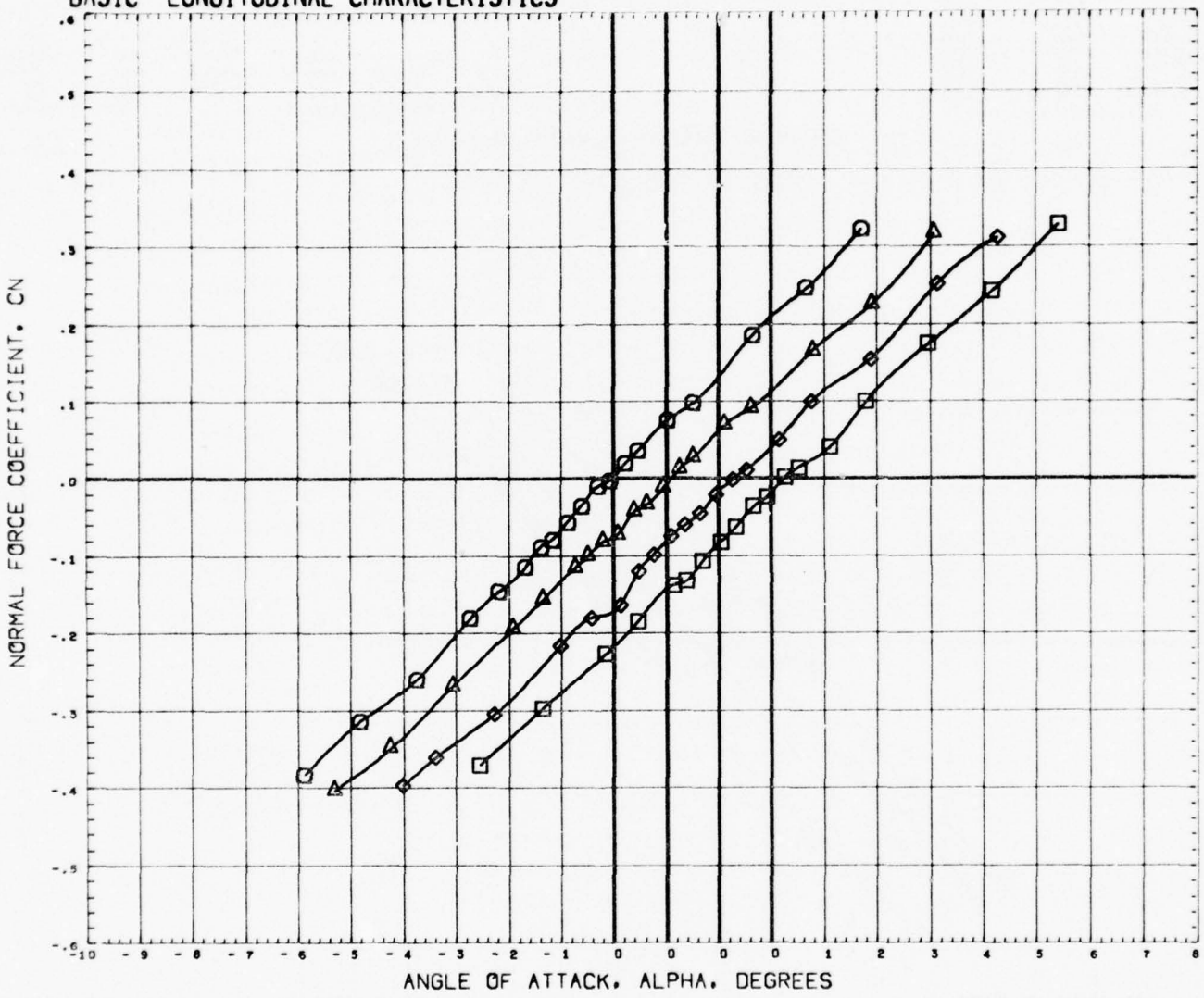


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.099	PHI	0.000	M-LGTH	2.250
△	1.198	C-LGTH	6.500	C-DIA	0.500
◇	1.297				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

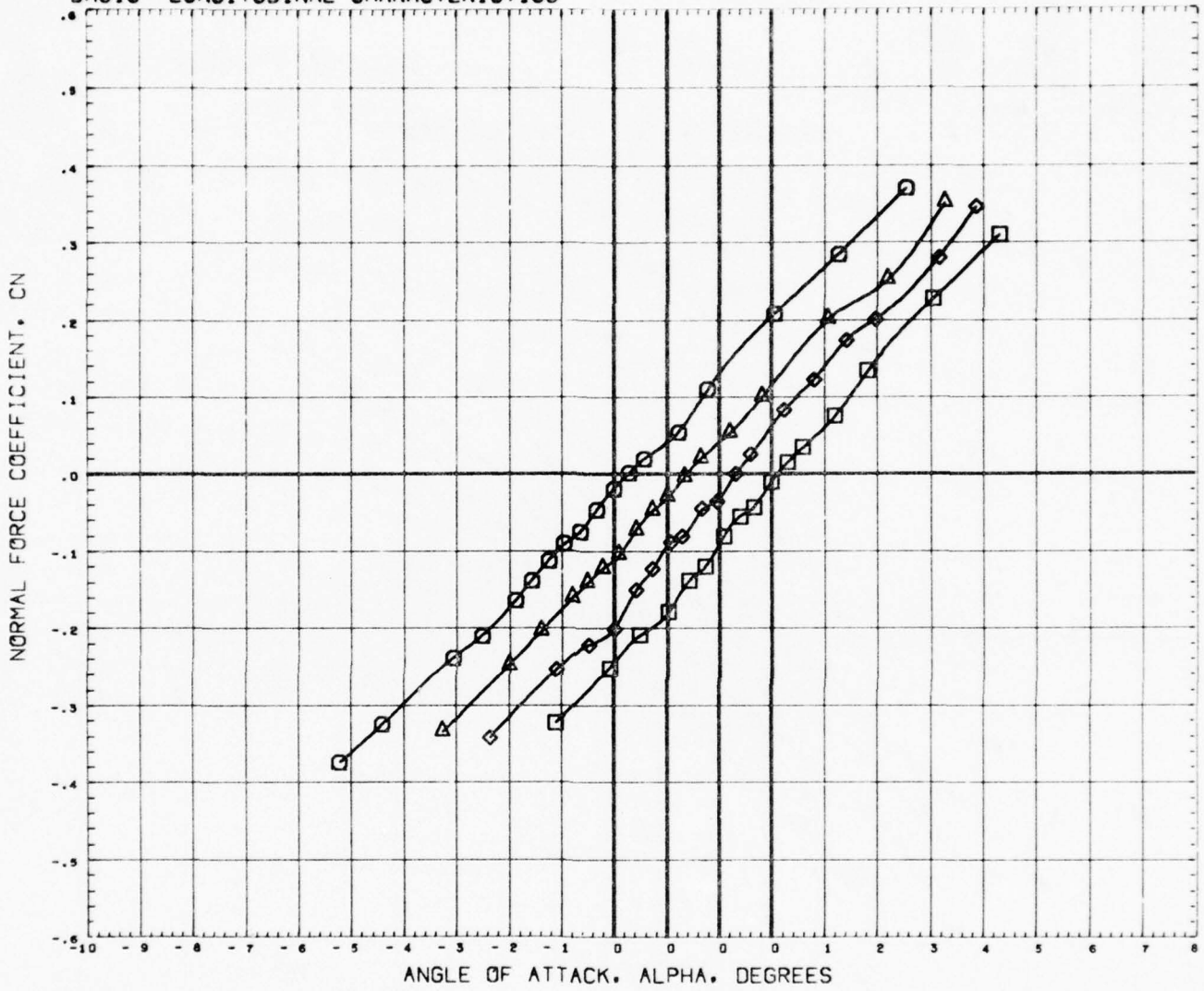


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	2.250
△	0.798	LS-LGH	2.500	S-WDTH	0.200
◇	0.950	R-WDTH	1.000		
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

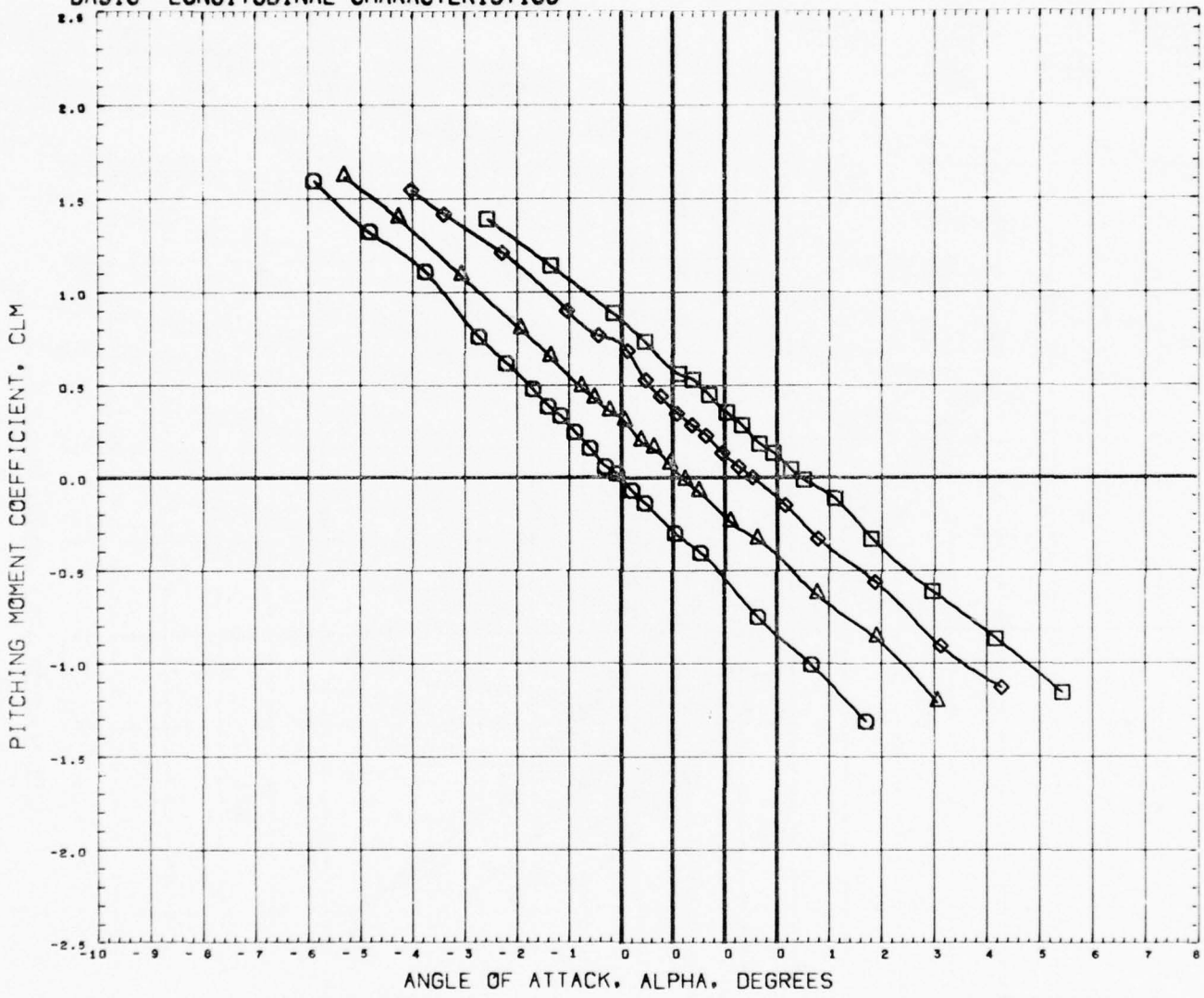


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.045	PHI	0.000	M-LGTH	2.250
△	1.098	LS-LGH	2.500	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		
□	1.296				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



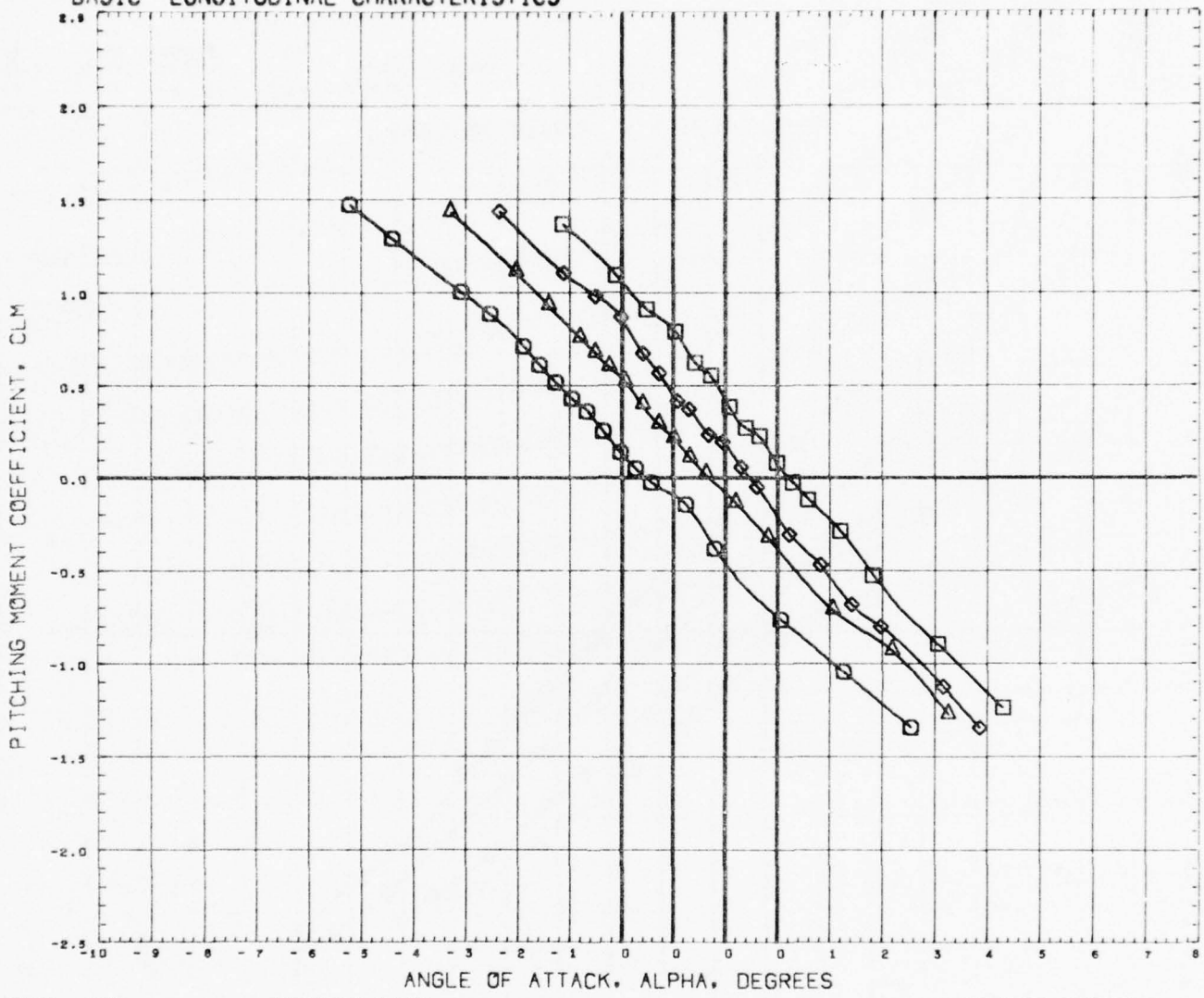
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	2.250
△	0.798	LS-LGH	2.500	S-WDTH	0.200
◇	0.950	R-WDTH	1.000		
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



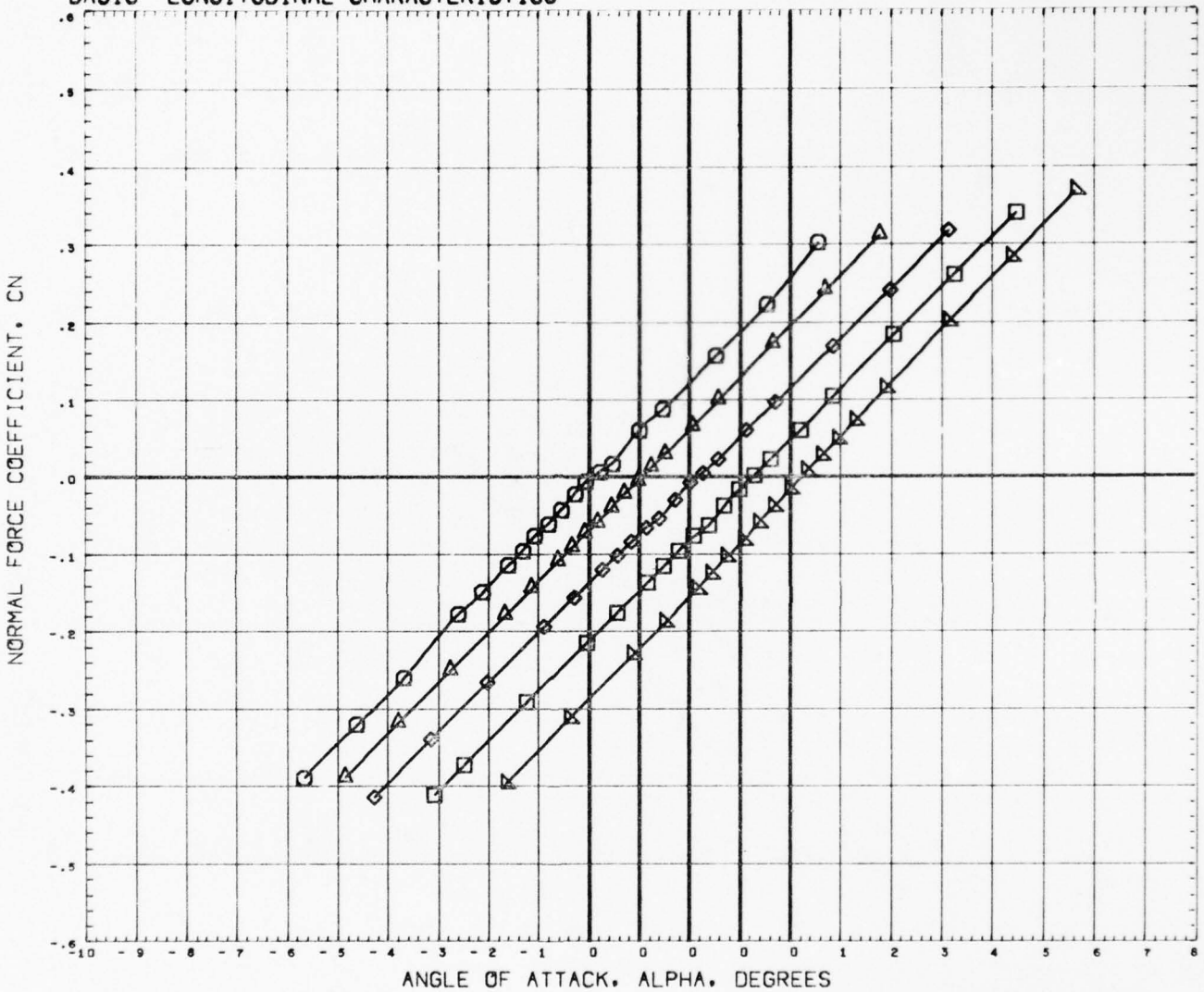
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.045	PHI	0.000	H-LGTH	2.250
△	1.098	LS-LGH	2.500	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		
□	1.296				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH
○	0.299
△	0.500
◇	0.801
□	0.949
▽	1.002

PARAMETRIC VALUES

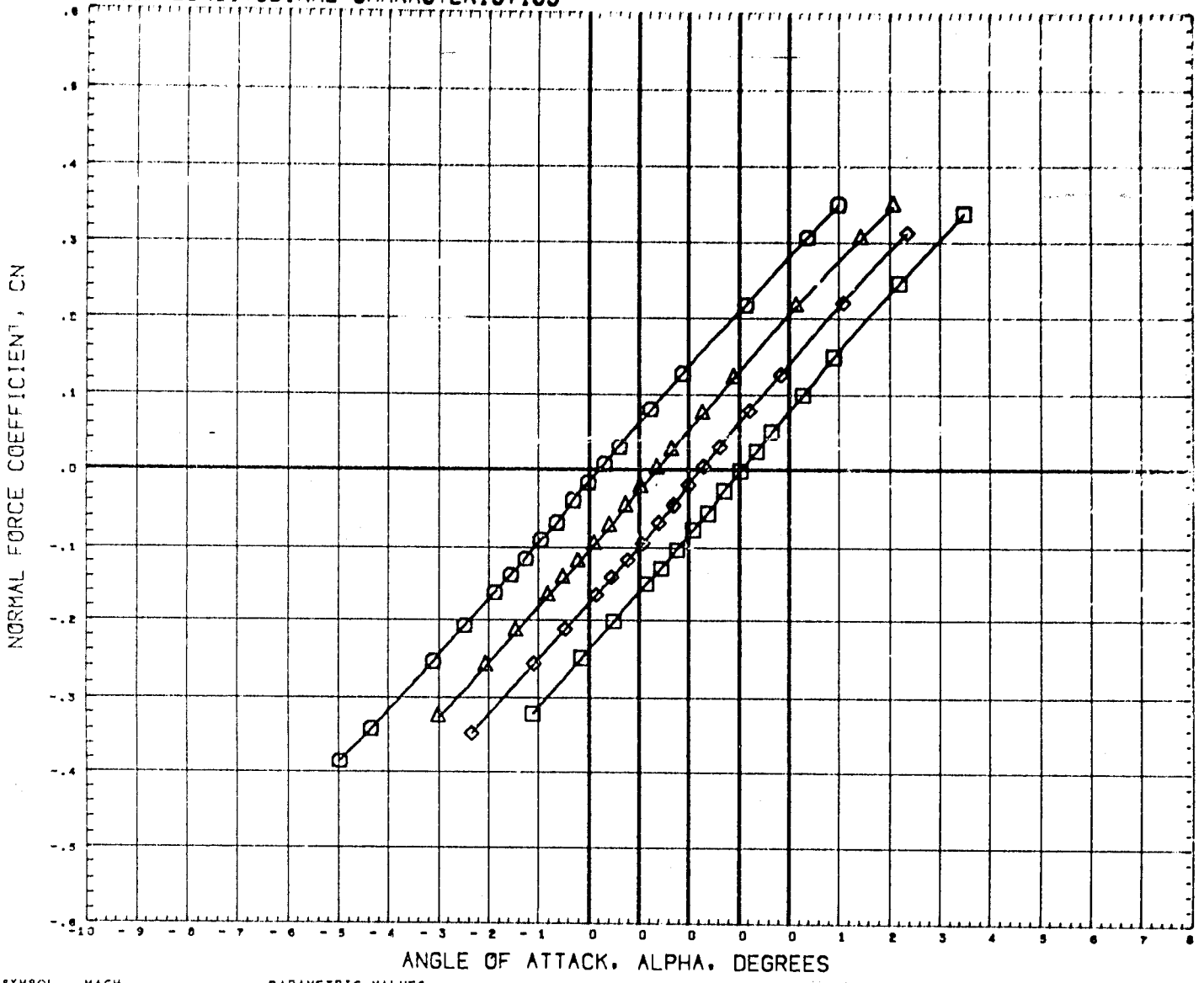
PHI	0.000	M-LGTH	1.500
LS-LGH	3.250	S-WDTH	0.200
R-WDTH	1.000		

DATA HIST. CODE #G

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



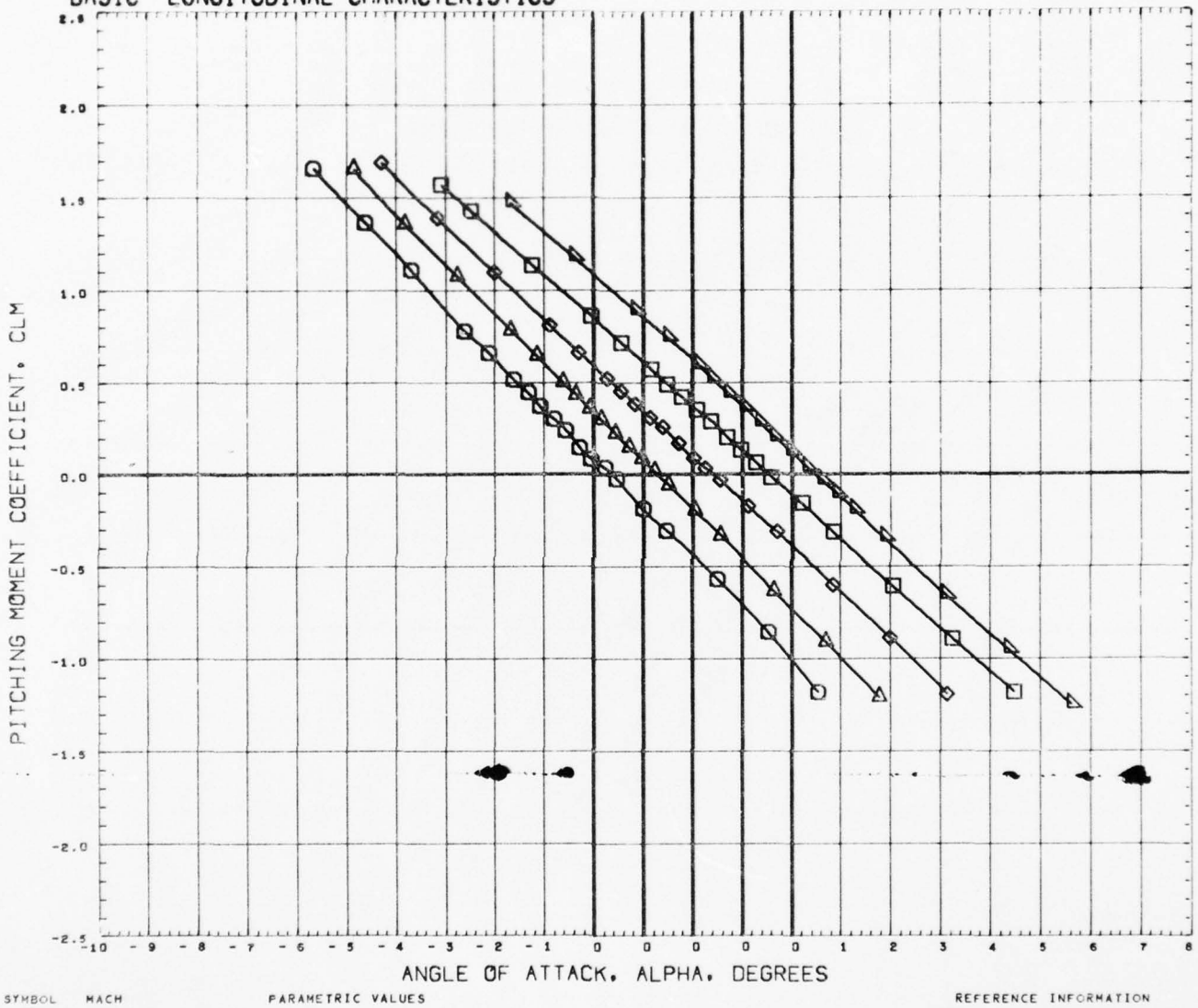
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.052	PHI	0.000	M-LGTH	1.500
△	1.098	LS-LGH	3.250	S-WDTH	0.200
◇	1.199	R-WDTH	.1.000		
□	1.300				

DATA HIST. CODE #G

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.299	PHI	0.000	M-LGTH	1.500
△	0.500	LS-LGH	3.250	S-WDTH	0.200
◇	0.801	R-WDTH	1.000		
□	0.949				
◸	1.002				

DATA HIST. CODE #G

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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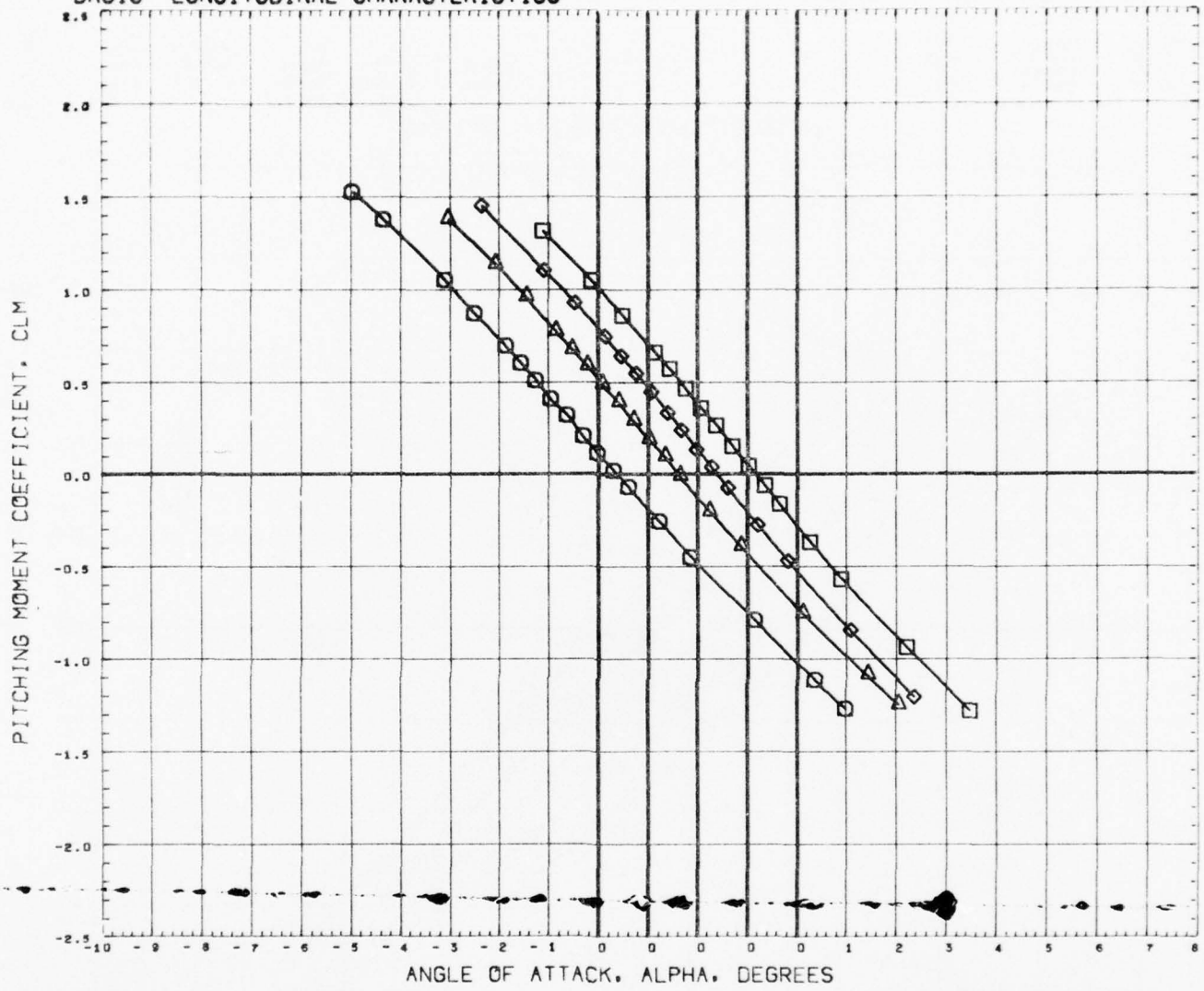
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

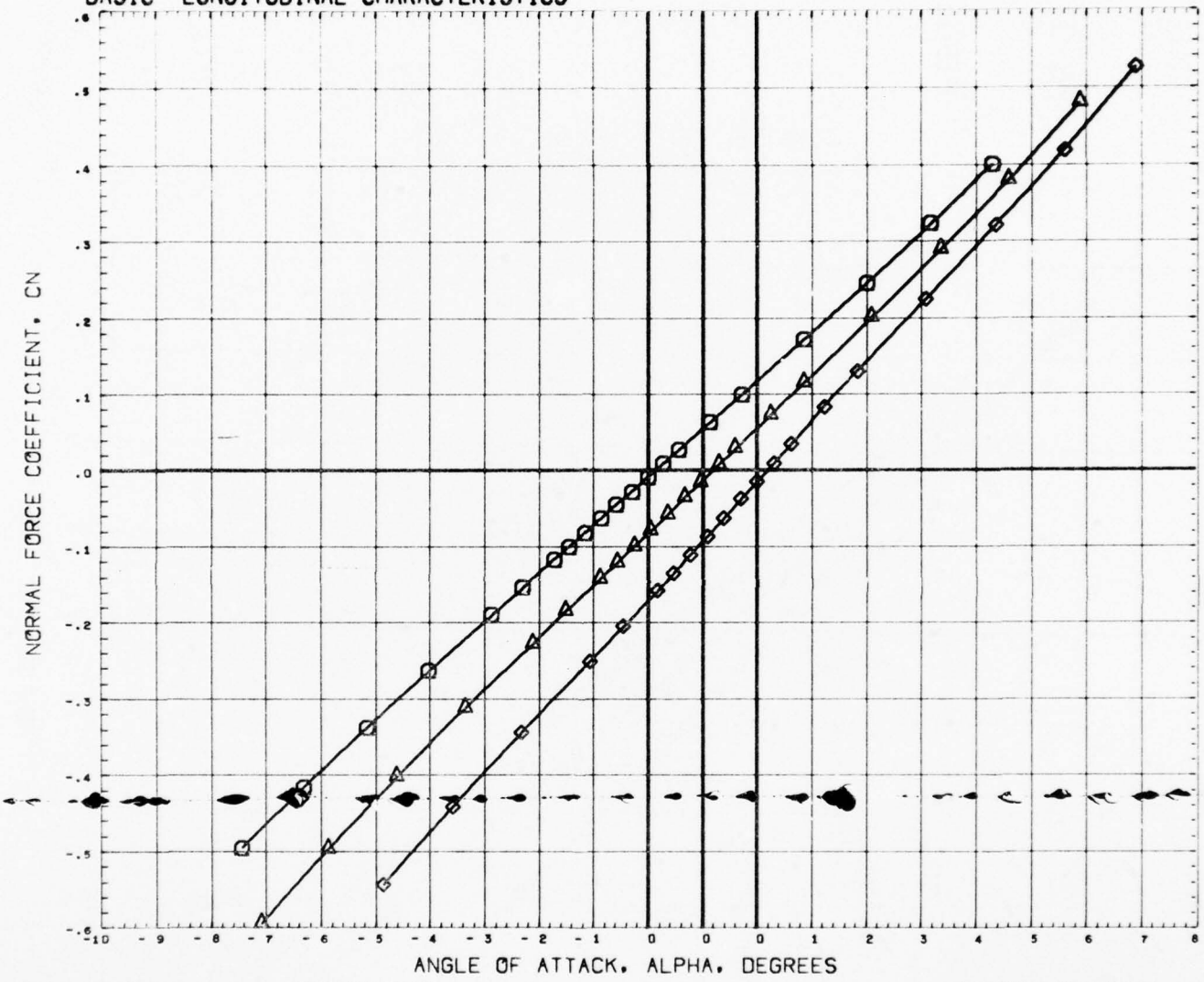


SYMBOL	MACH		PARAMETRIC VALUES		
○ △	1.052	PHI	0.000	M-LGTH	1.500
	1.098	LS-LGH	3.250	S-WDTH	0.200
◇	1.199	R-WDTH	1.000		
□	1.300				

DATA HIST. CODE #G

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

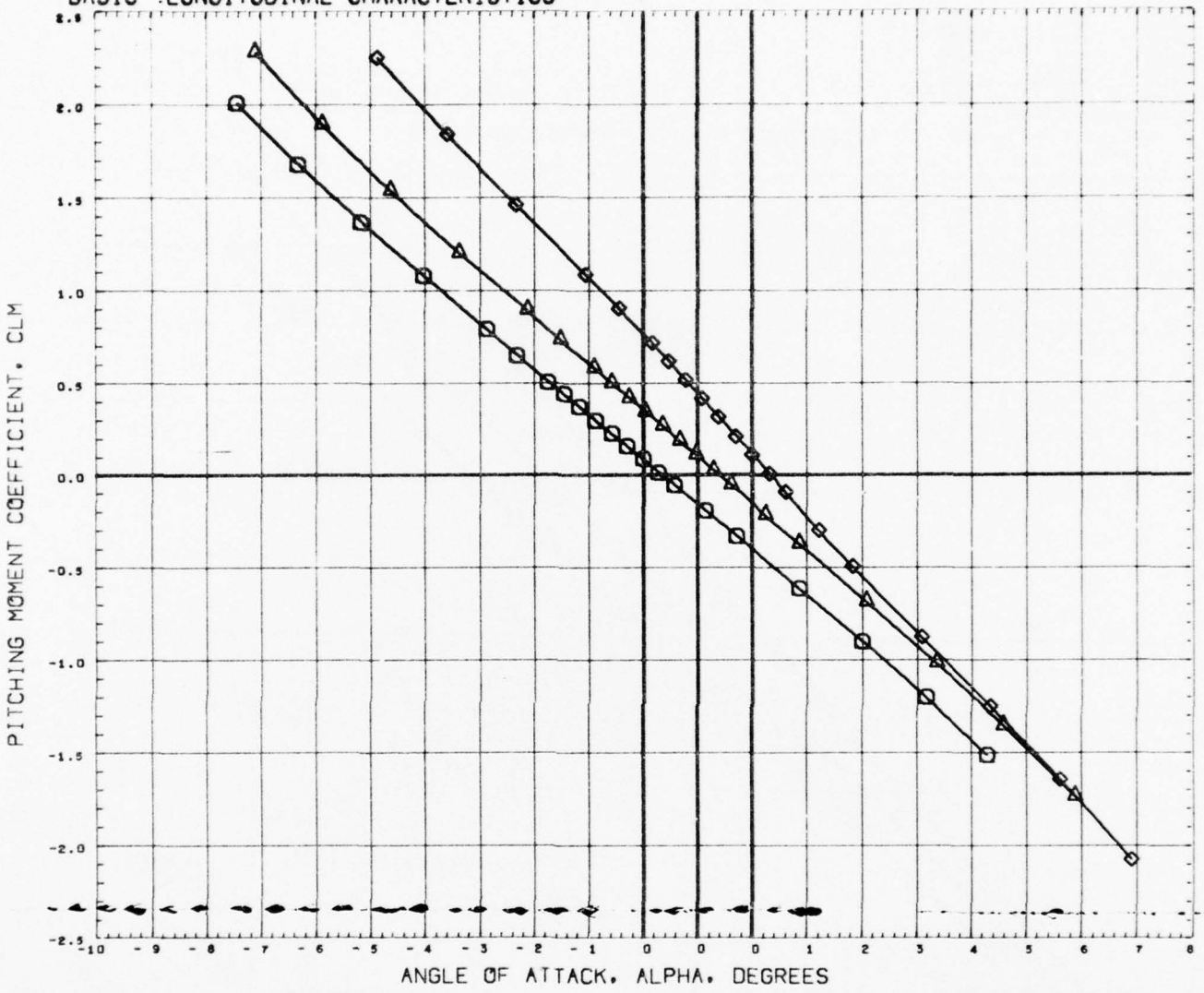


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.800	PHI	22.500	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

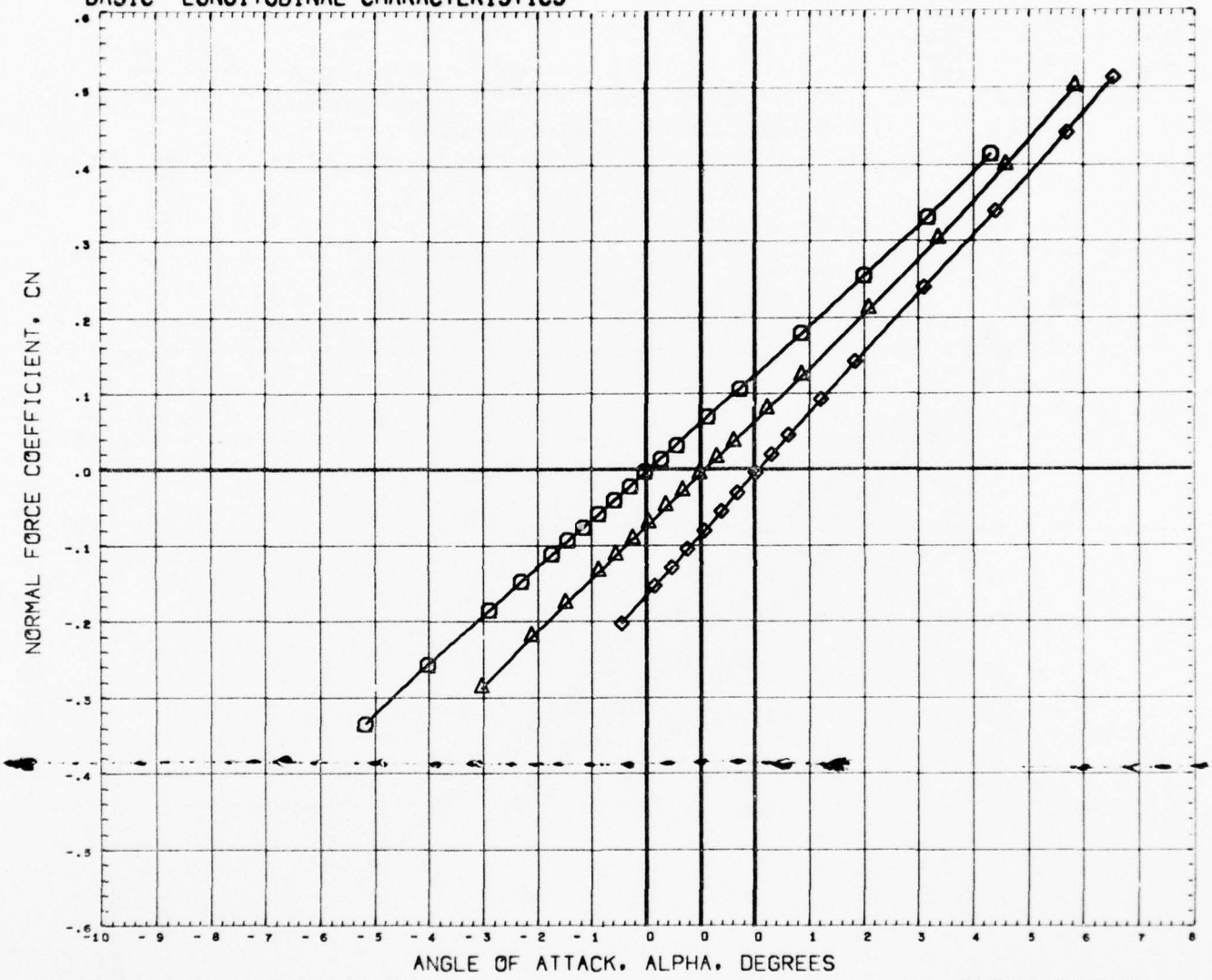


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.800	PHI	22.500	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.800	PHI	45.000	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.198	R-WDTH	1.000		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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YMRP	0.0000	INCHES
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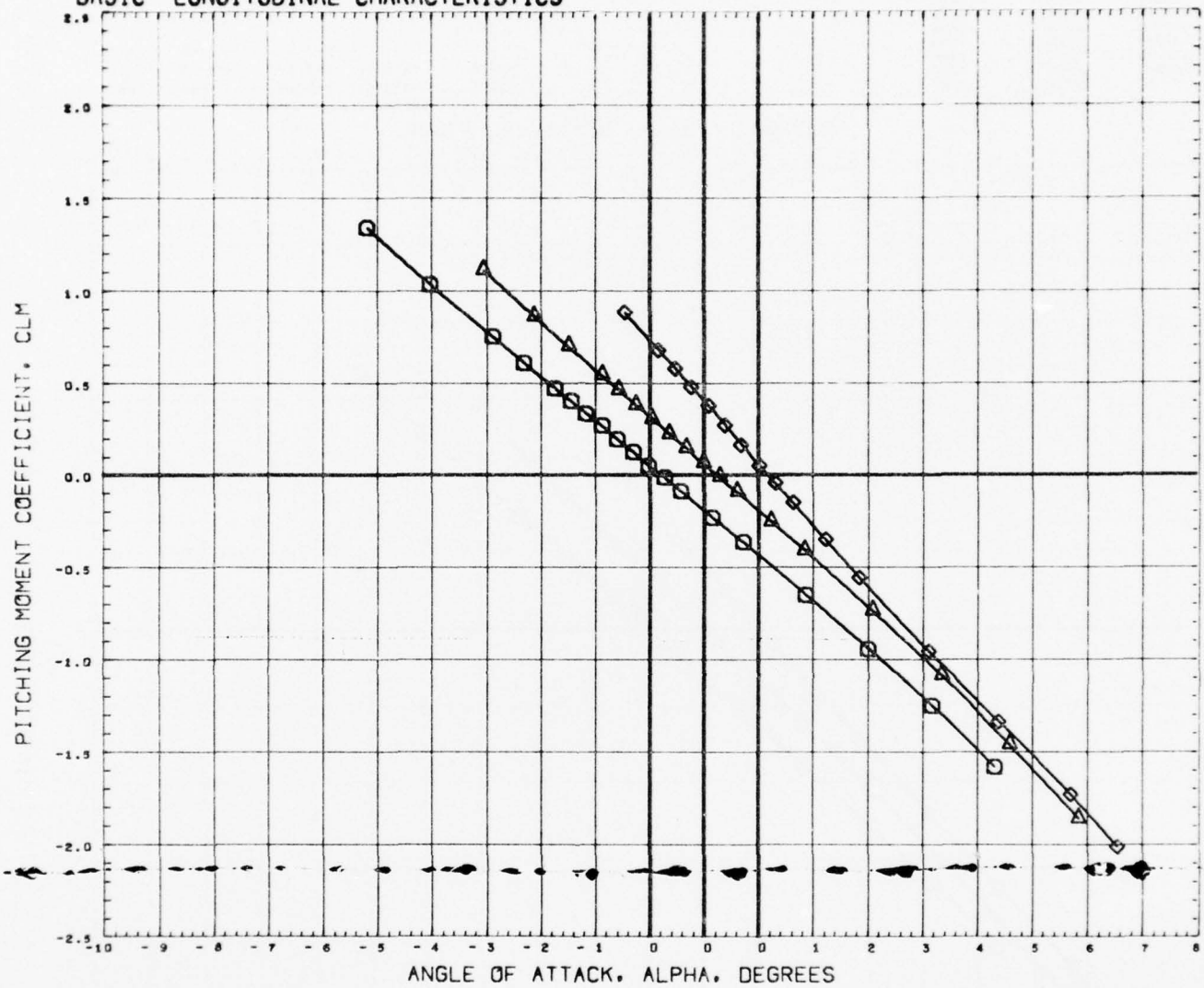
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

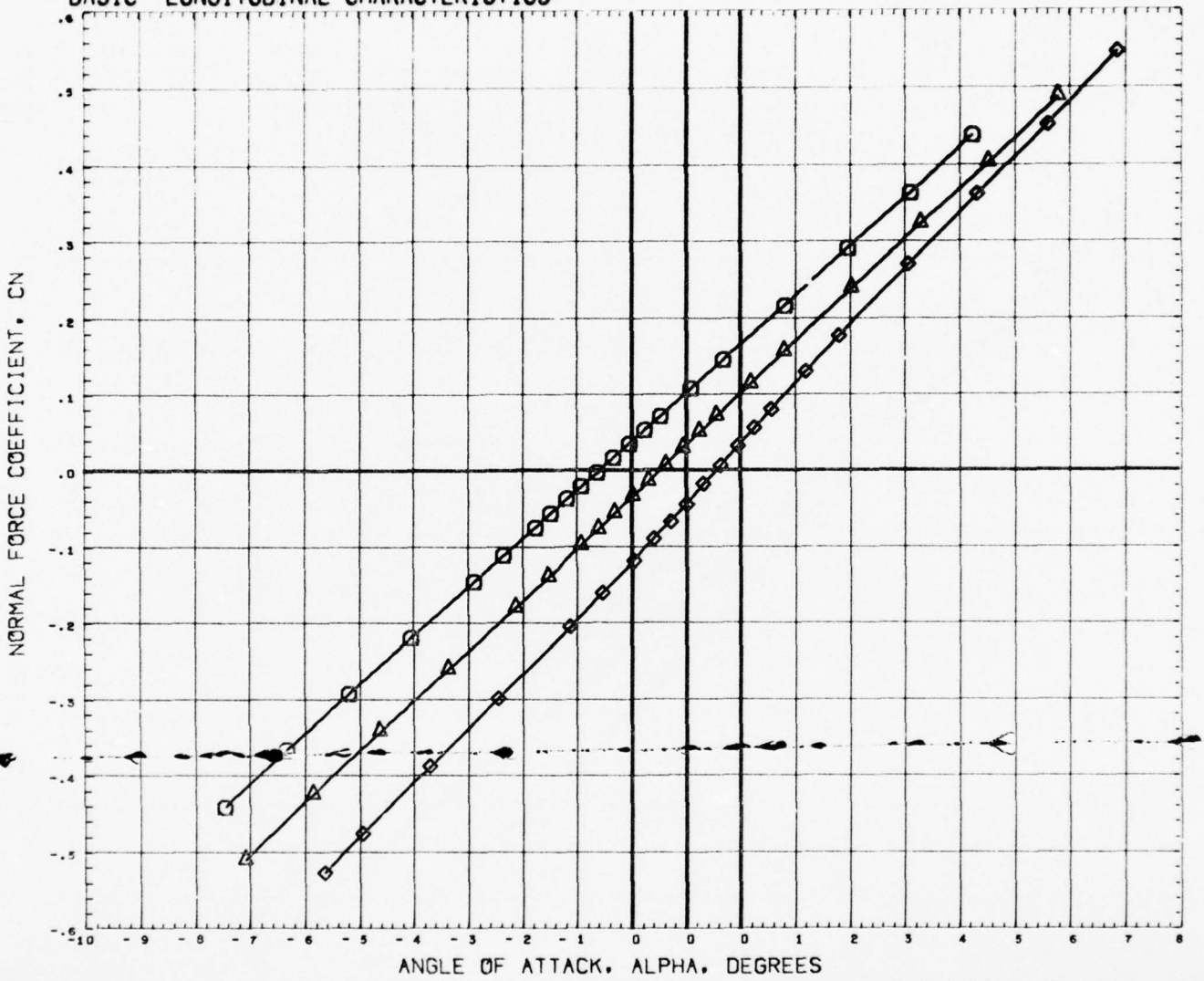


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.800	PHI	45.000	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.198	R-WDTH	1.000		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

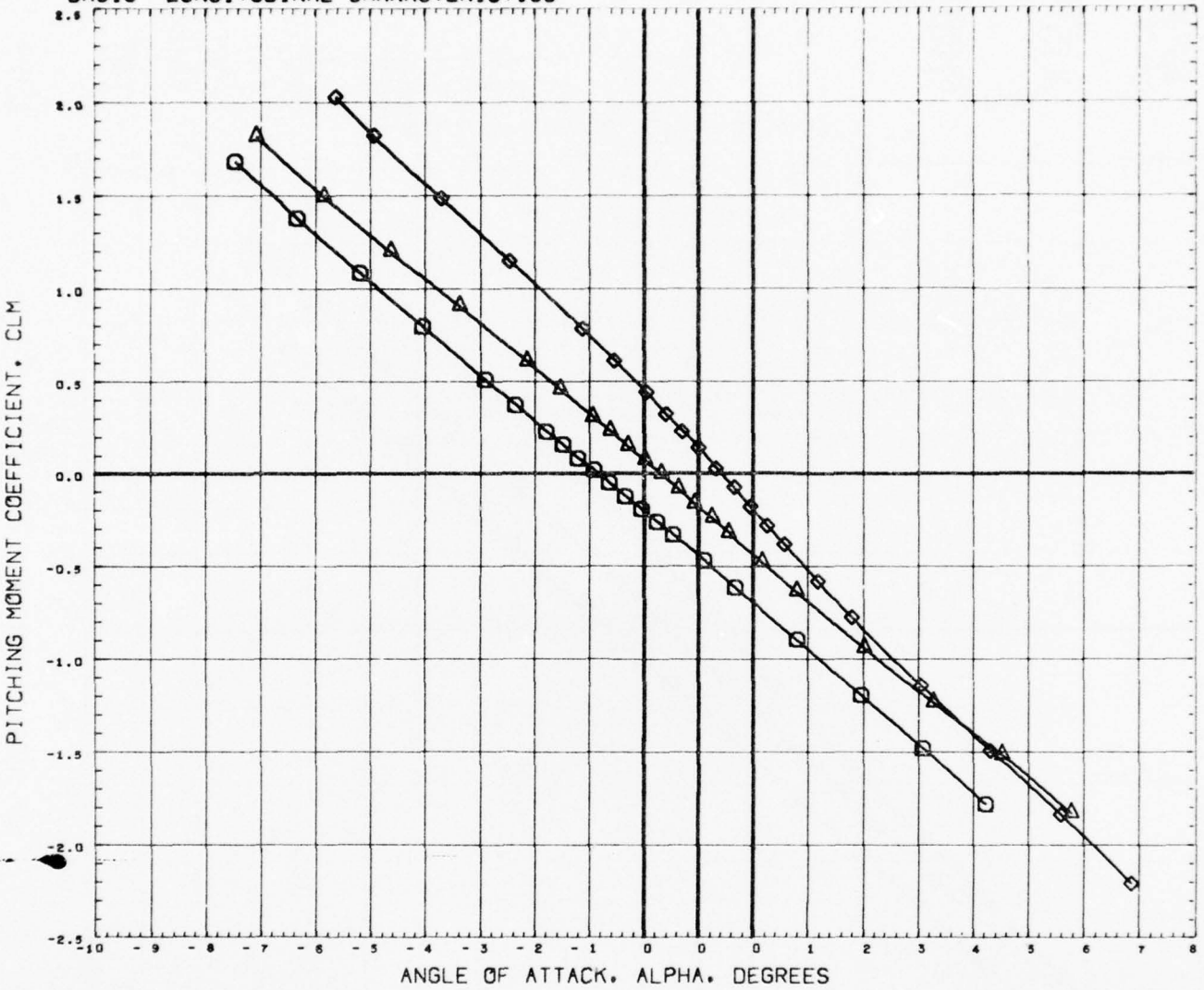


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.801	PHI	180.000	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.198	R-WDTH	1.000		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.801	PHI	180.000	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.198	R-WDTH	1.000		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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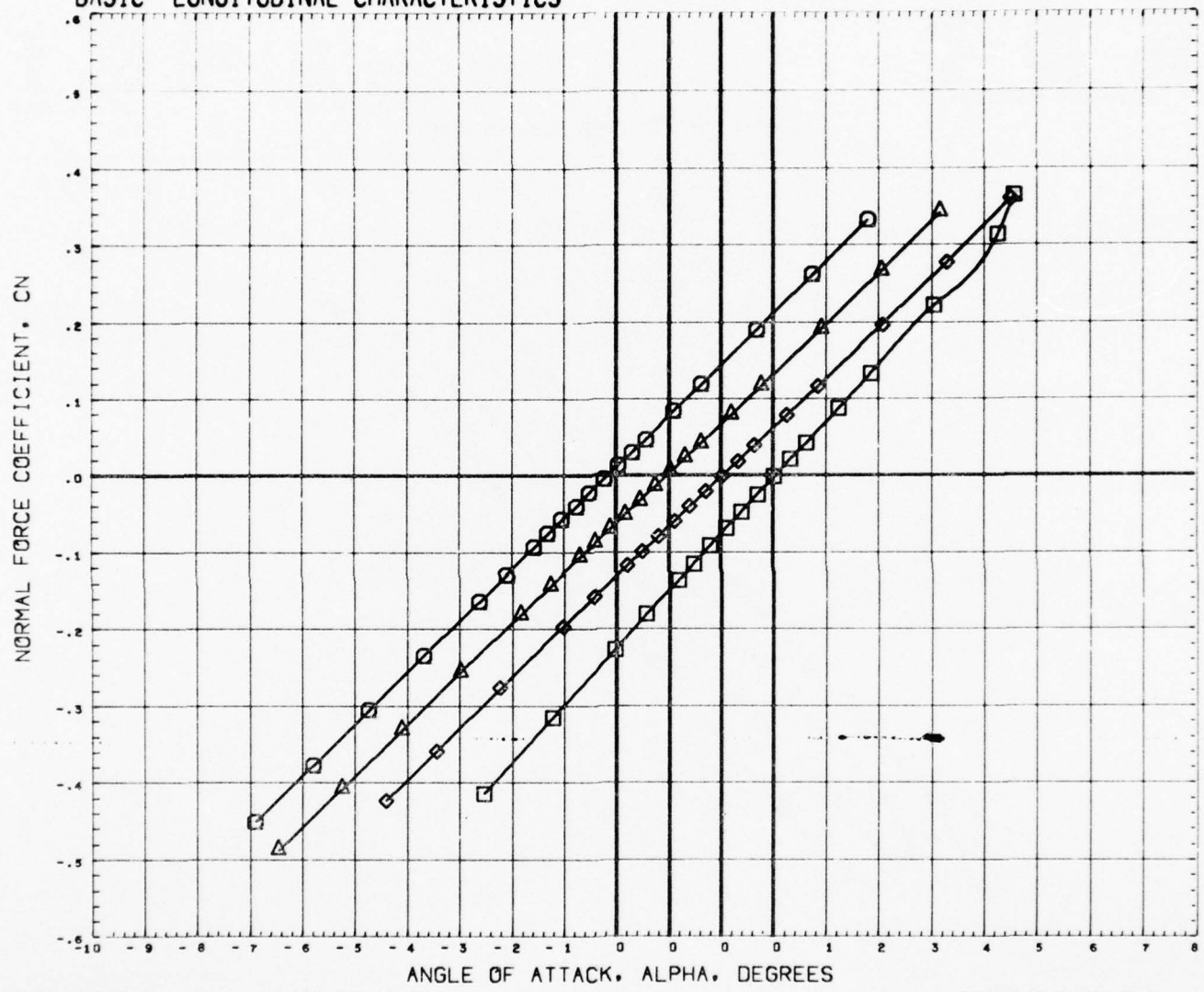
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.499	PHI	0.000	M-LGTH	0.750
△	0.800	LS-LGH	4.000	S-WDTH	0.200
◇	0.952	R-WDTH	1.000		
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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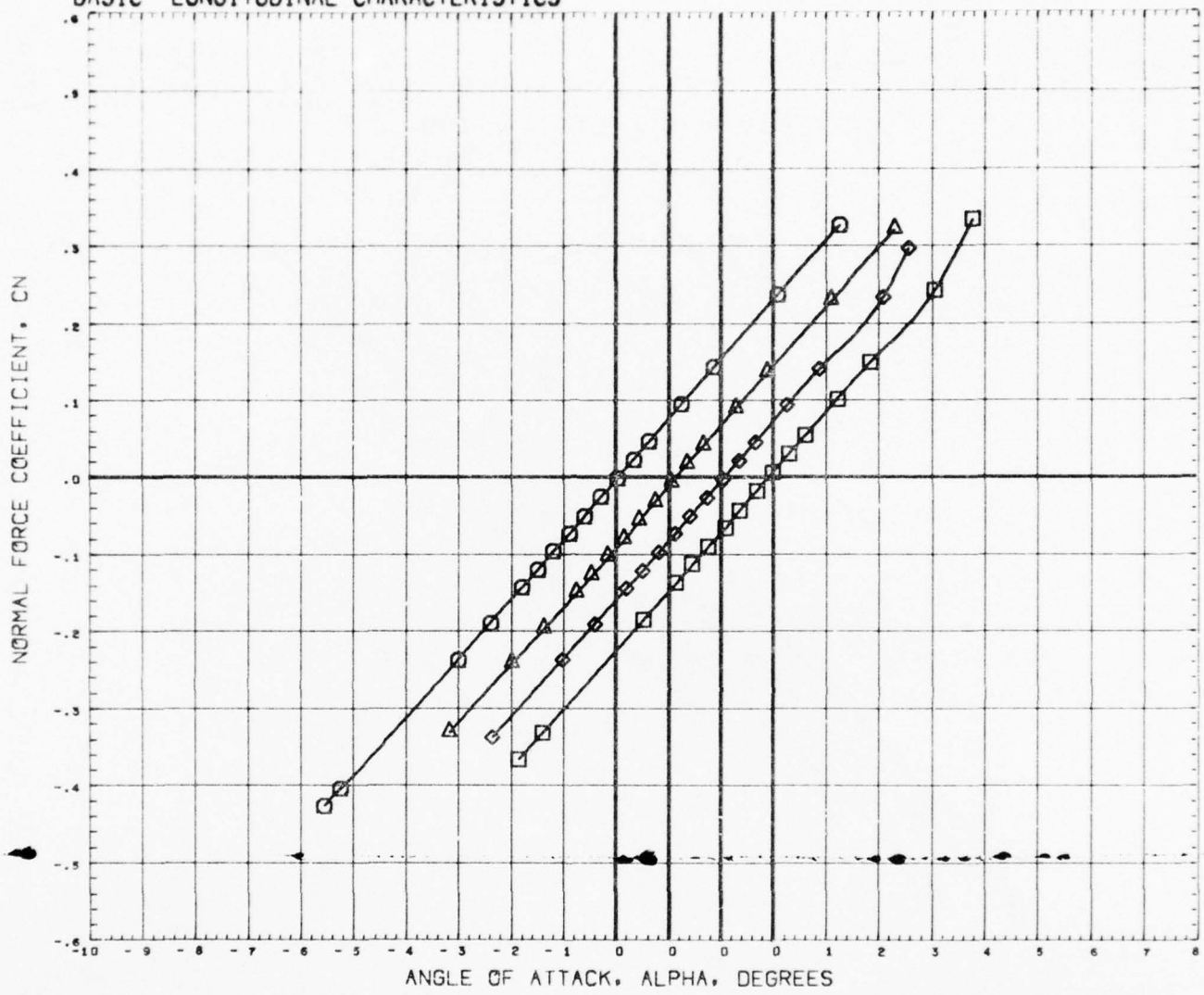
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



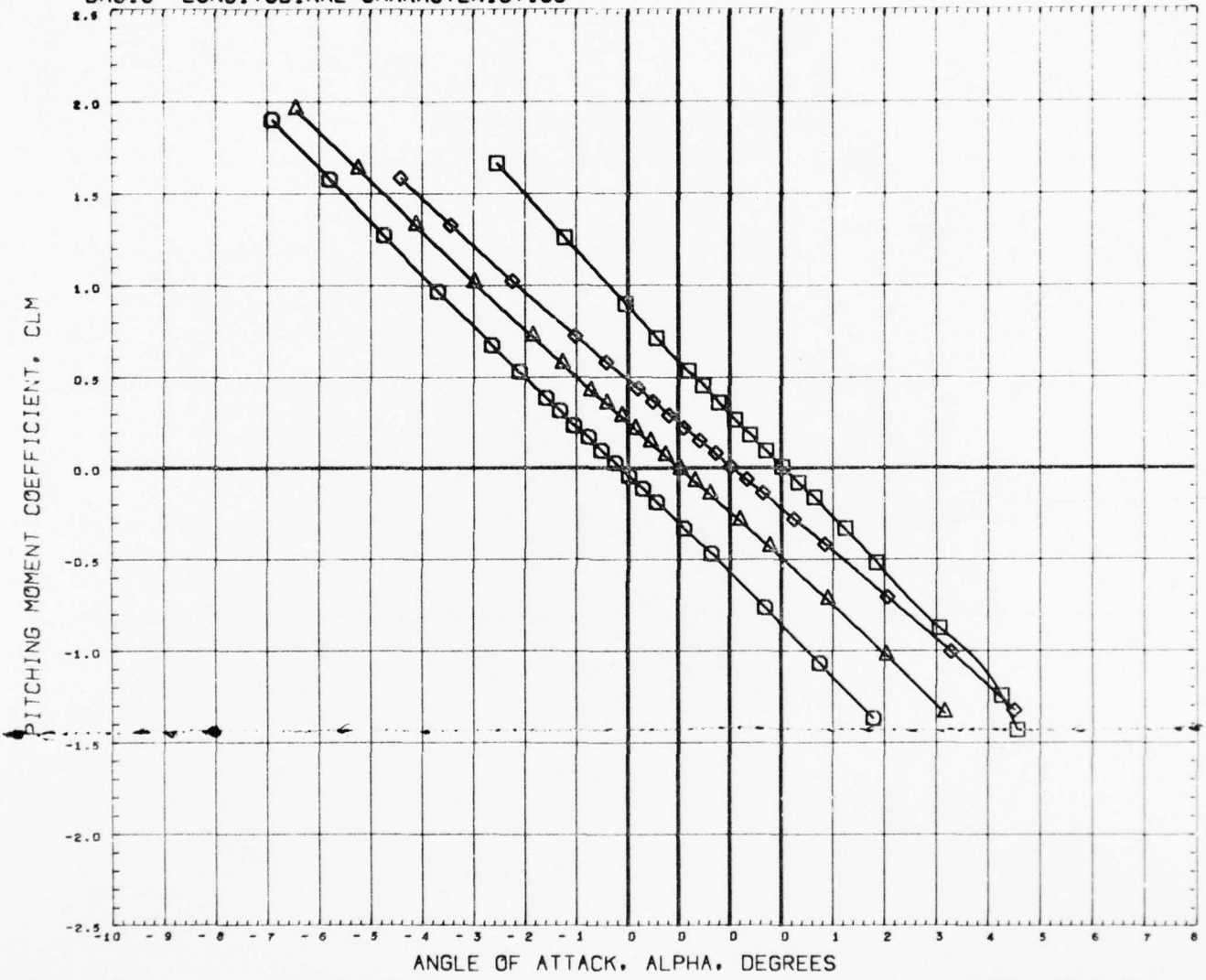
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.049	PHI	0.000	M-LGTH	0.750
△	1.100	LS-LGH	4.000	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		
□	1.297				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.499	PHI	0.000	M-LGTH	0.750
△	0.800	LS-LGH	4.000	S-WDTH	0.200
◇	0.952	R-WDTH	1.000		
□	1.001				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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YMRP	0.0000	INCHES
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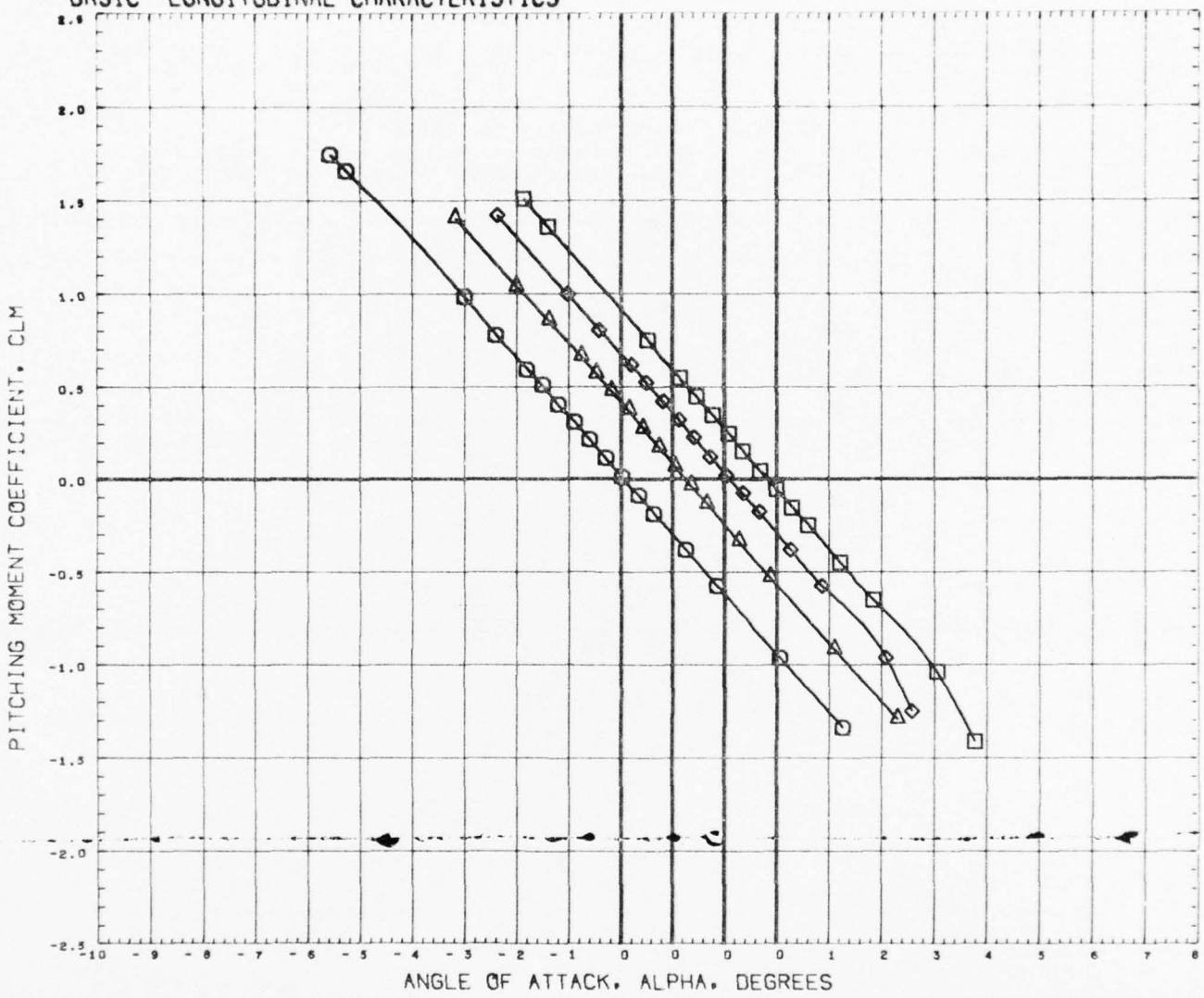
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



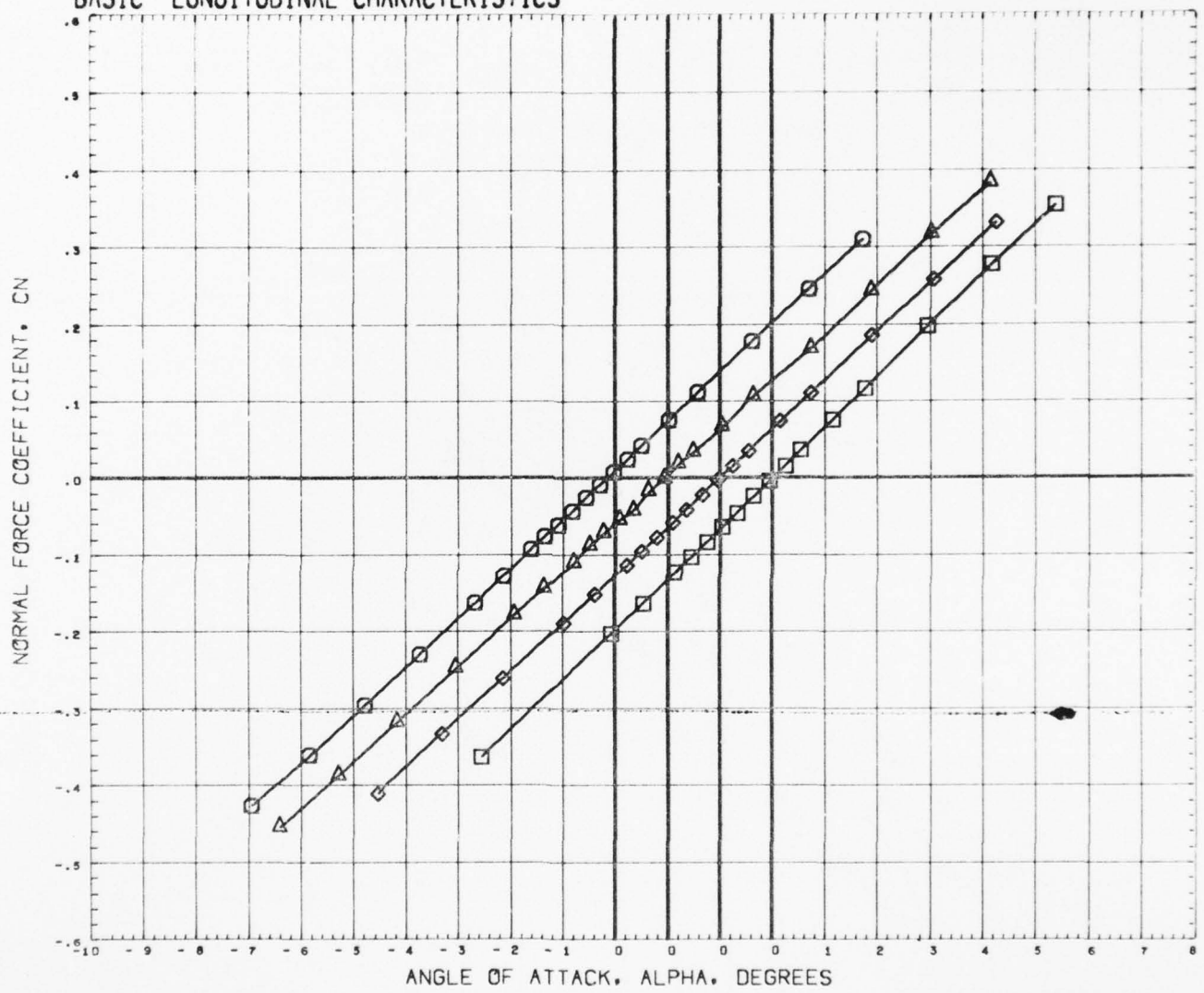
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.049	PHI	0.000	M-LGTH	0.750
△	1.100	LS-LGH	4.000	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		
□	1.297				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

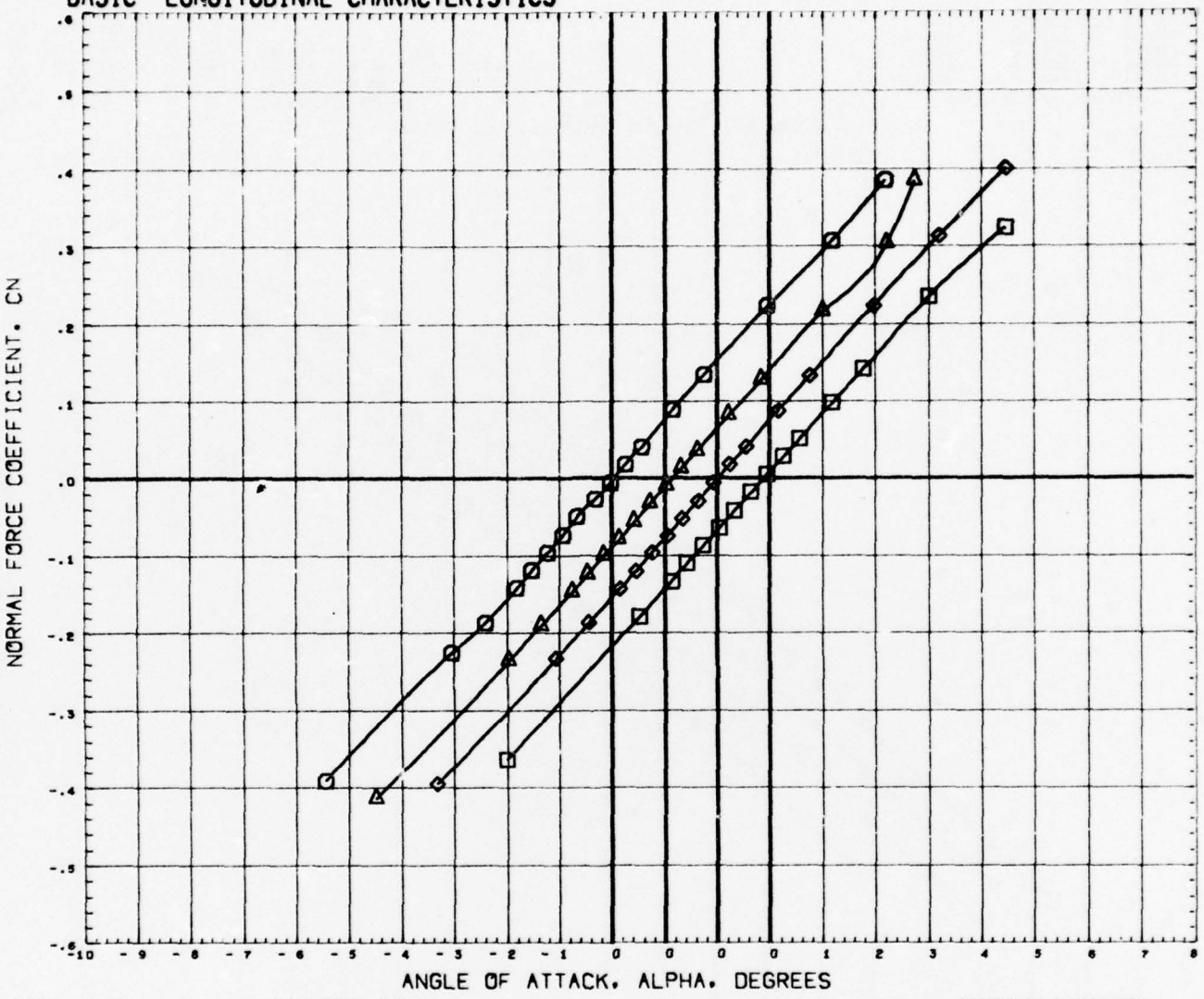


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	2.250
△	0.799	LS-LGH	3.000	S-WDTH	0.200
◇	0.948	R-WDTH	1.000		
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.048	PHI	0.000	M-LGTH	2.250
△	1.100	LS-LGH	5.000	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		
□	1.298				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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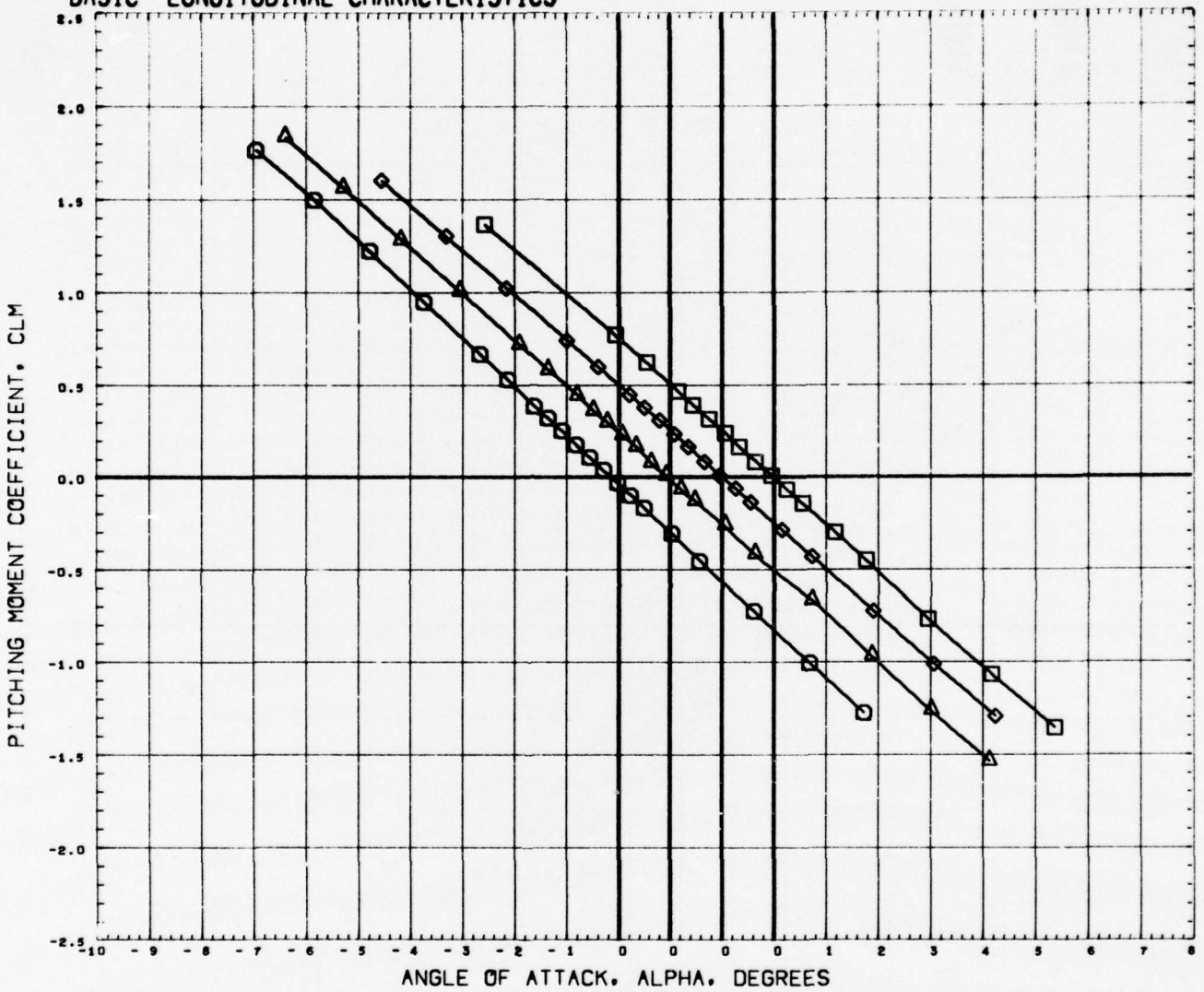
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

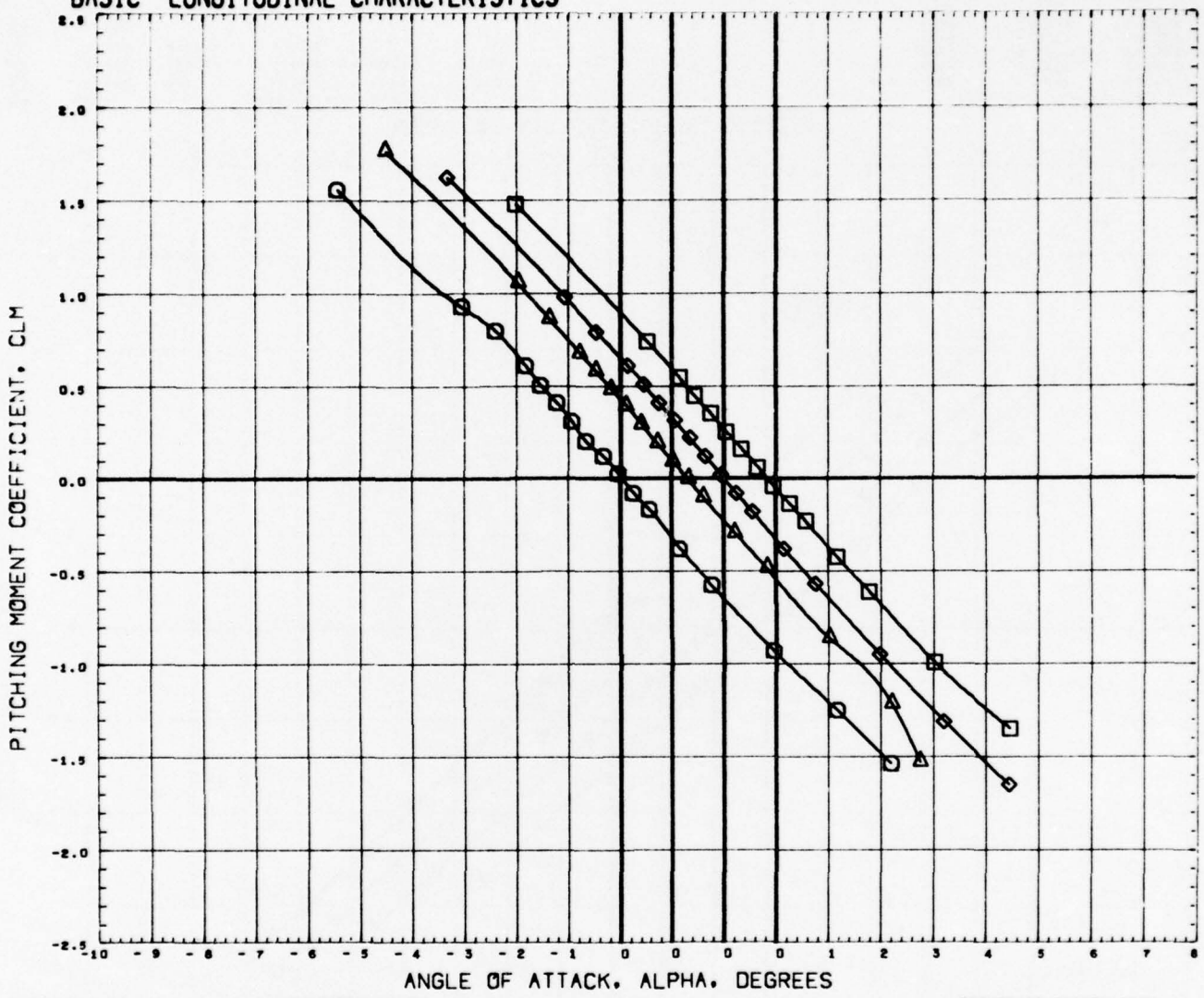


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	2.250
△	0.799	LS-LGH	3.000	S-WDTH	0.200
◇	0.948	R-WDTH	1.000		
□	1.000				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

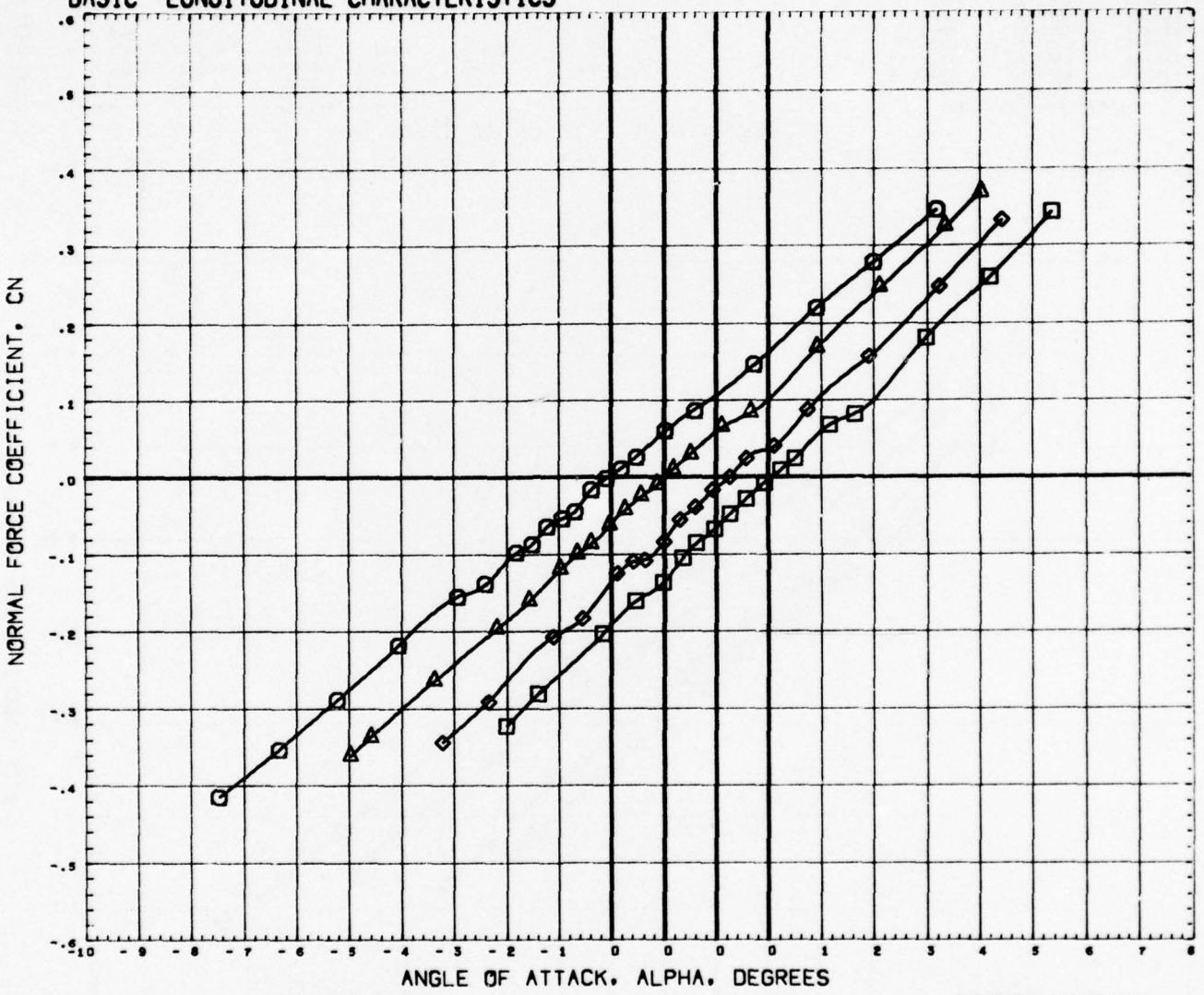


SYMBOL	MACH	PARAMETRIC VALUES			
○	1.048	PHI	0.000	M-LGTH	2.250
△	1.100	LS-LGH	3.000	S-WDTH	0.200
◇	1.197	R-WDTH	1.000		
□	1.298				

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.801	PHI	0.000	M-LGTH	2.250
△	1.002	LS-LGH	2.500	S-WDTH	0.200
◇	1.100	R-WDTH	1.000	C-LGTH	5.000
□	1.199	C-DIA	0.500		

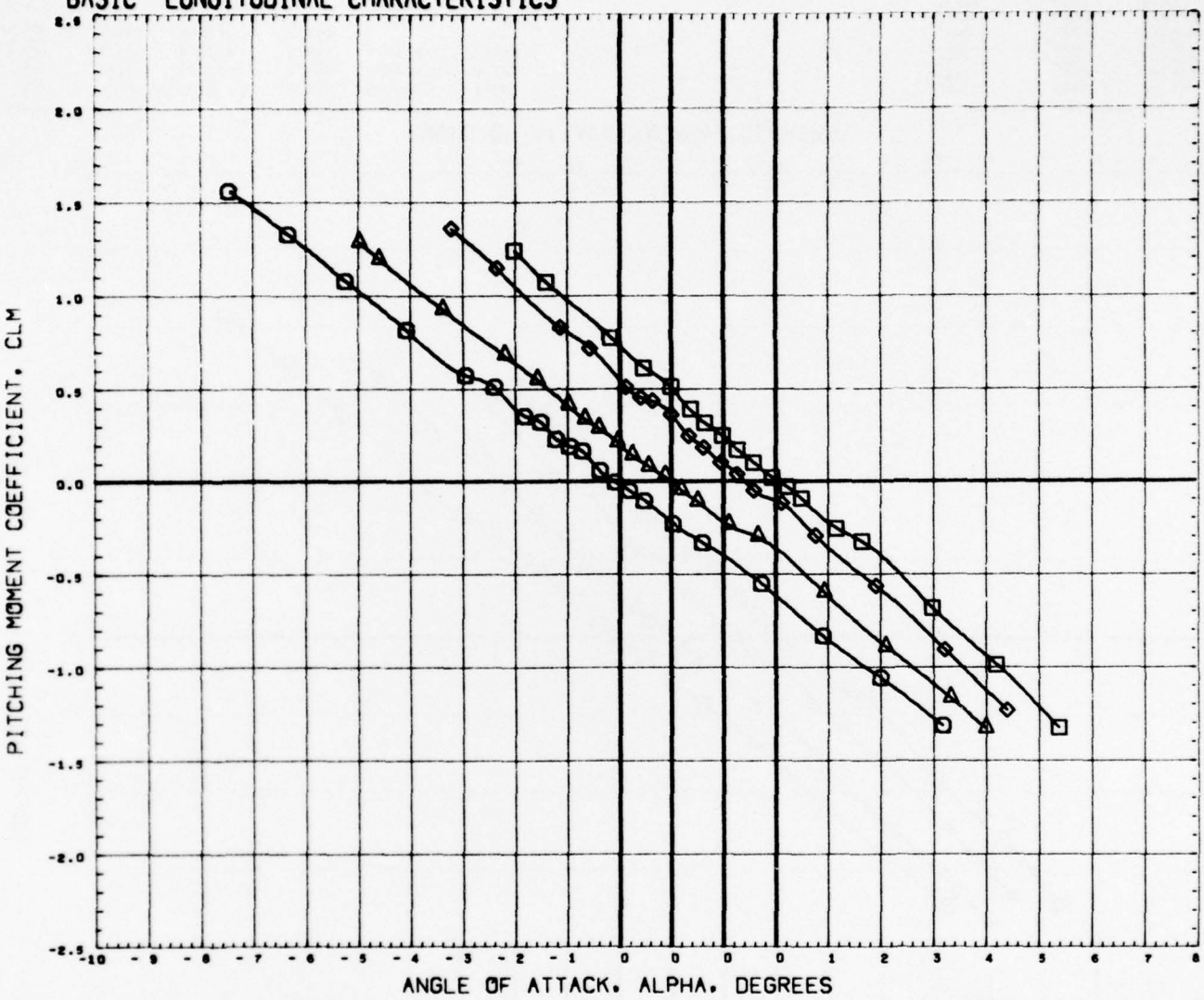
REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL.N1R1C2 (RTAR08) 10 MAR 72 PAGE 71

BASIC LONGITUDINAL CHARACTERISTICS



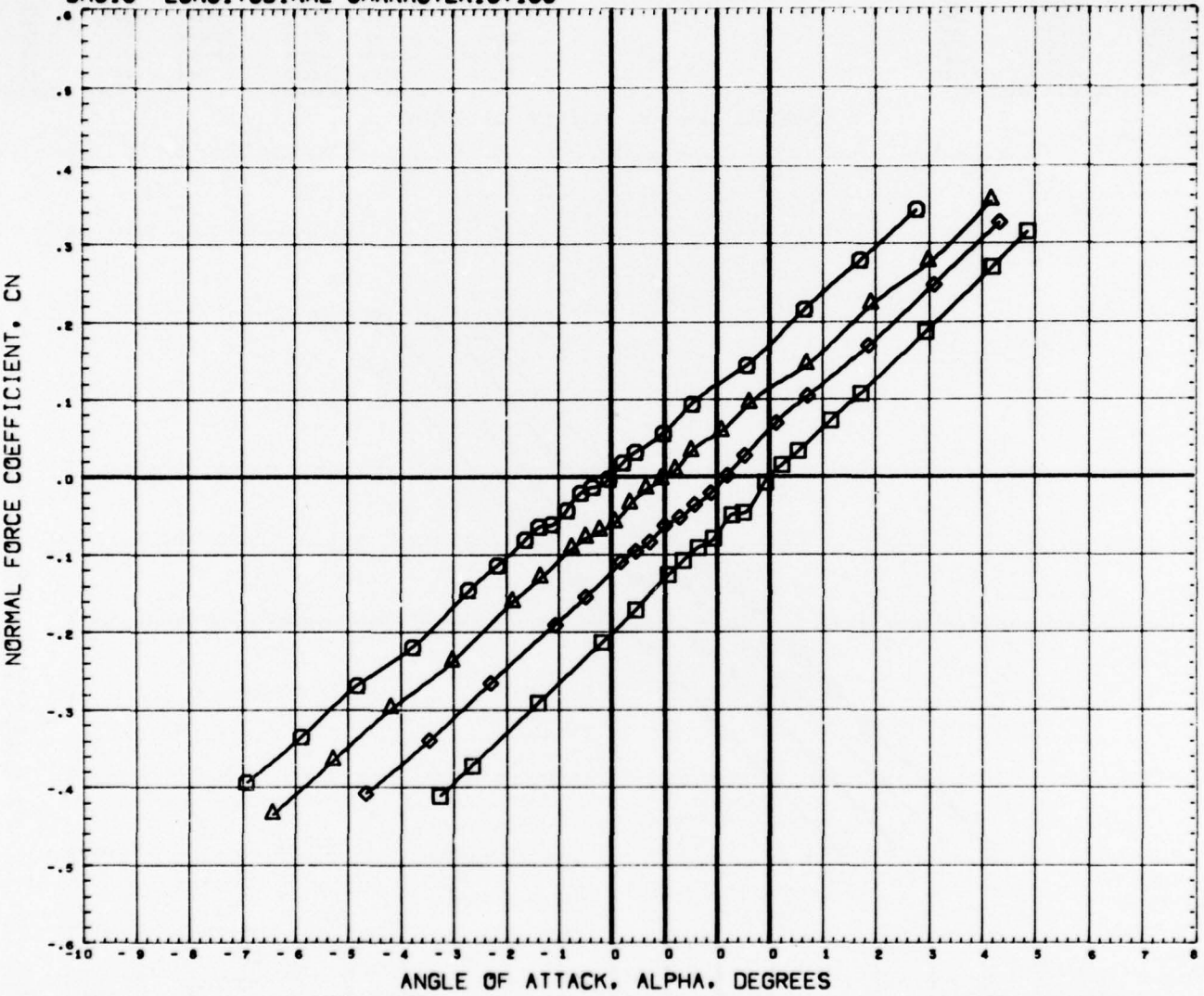
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.801	PHI	0.000	M-LGTH	2.250
⊠ △	1.002	LS-LGTH	2.500	S-WDTH	0.200
◇	1.100	R-WDTH	1.000	C-LGTH	5.000
□	1.199	C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL.N1R1C2 (RTAR08) 10 MAR 72 PAGE 72

BASIC LONGITUDINAL CHARACTERISTICS

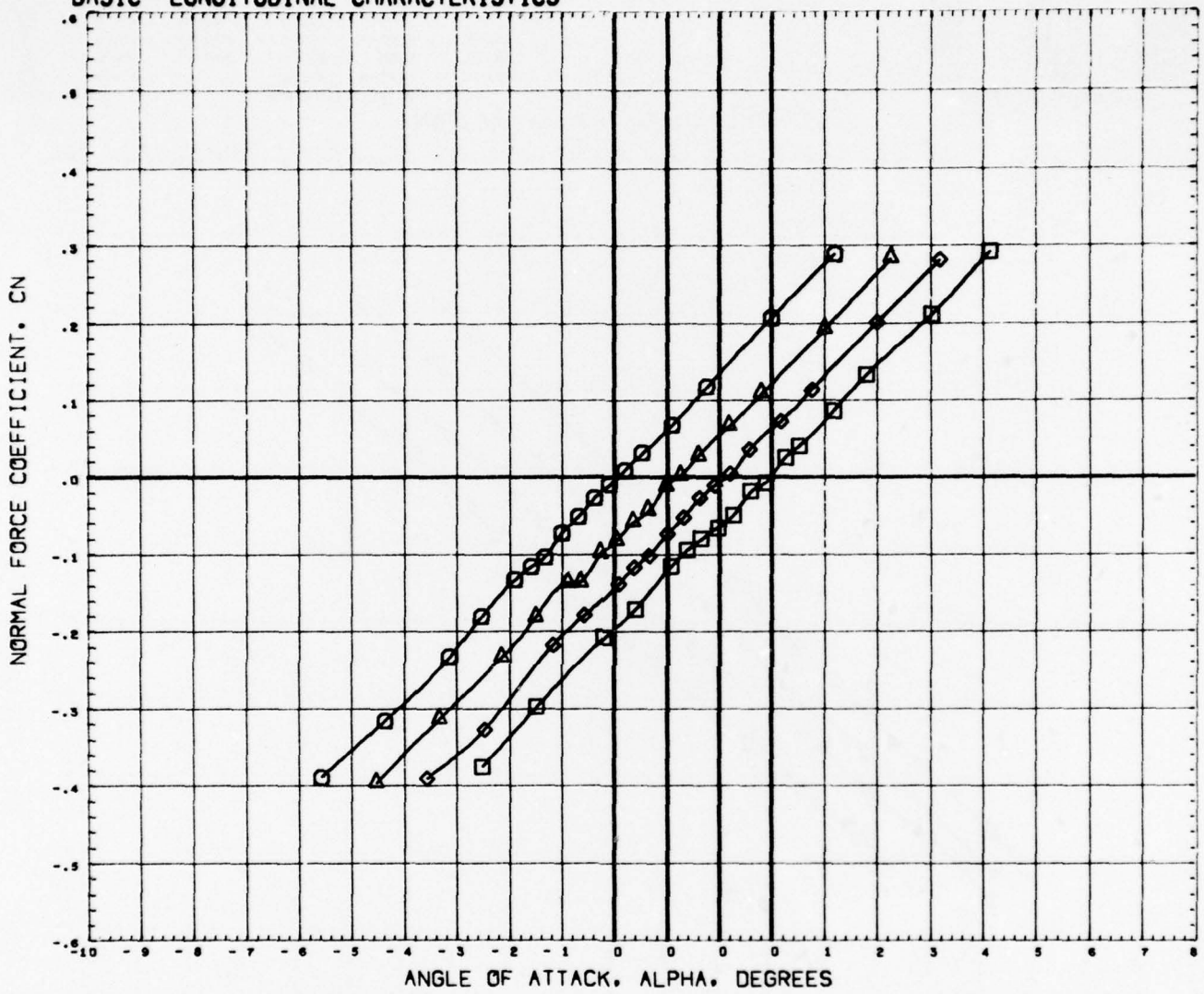


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	LS-LGH	3.250	S-WDTH	0.200
◇	0.947	R-WDTH	1.000	C-LGTH	5.000
□	1.002	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



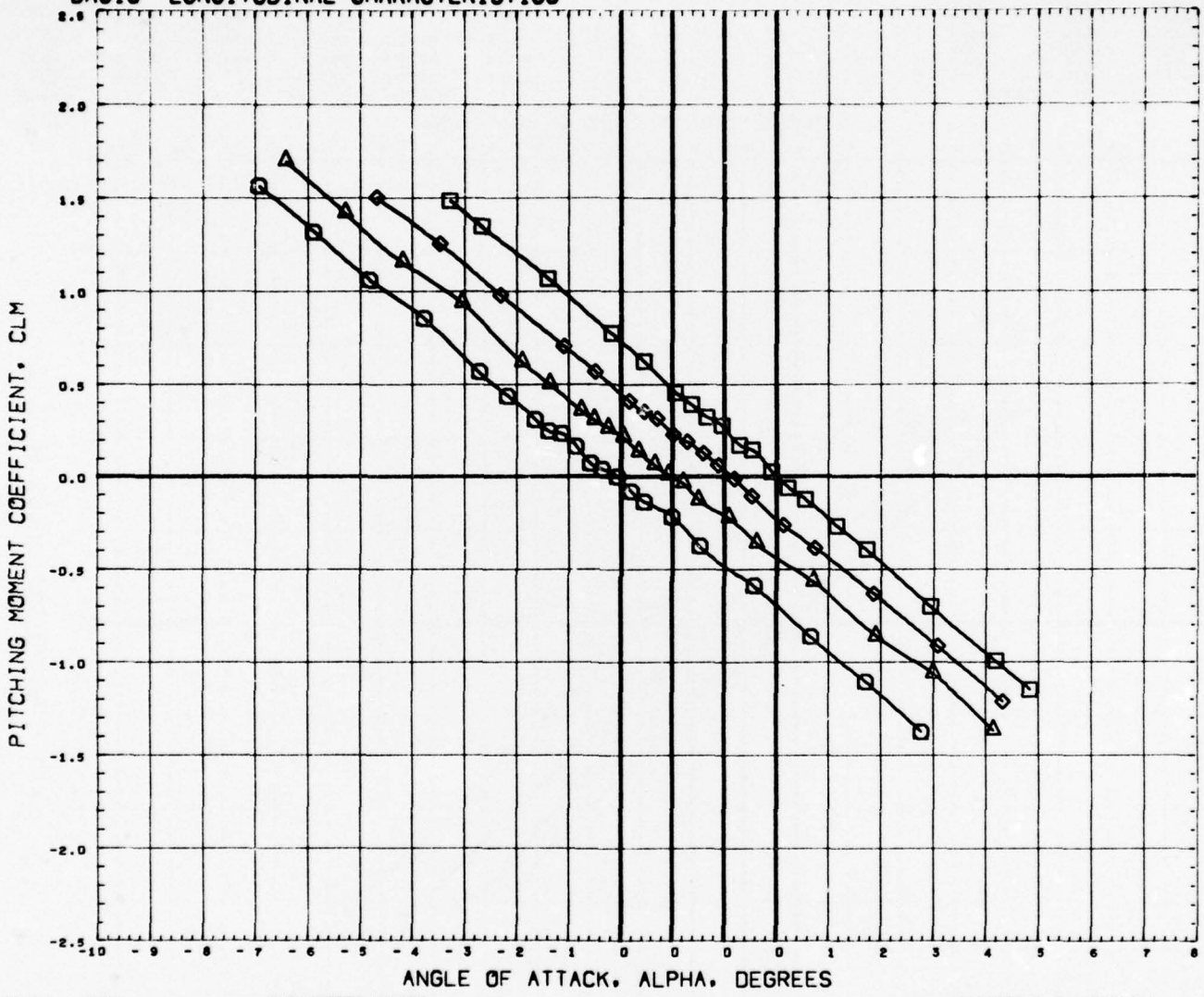
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.049	PHI	0.000	M-LGTH	1.500
△	1.102	LS-LGH	3.250	S-WDTH	0.200
◇	1.199	R-WDTH	1.000	C-LGTH	5.000
□	1.300	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

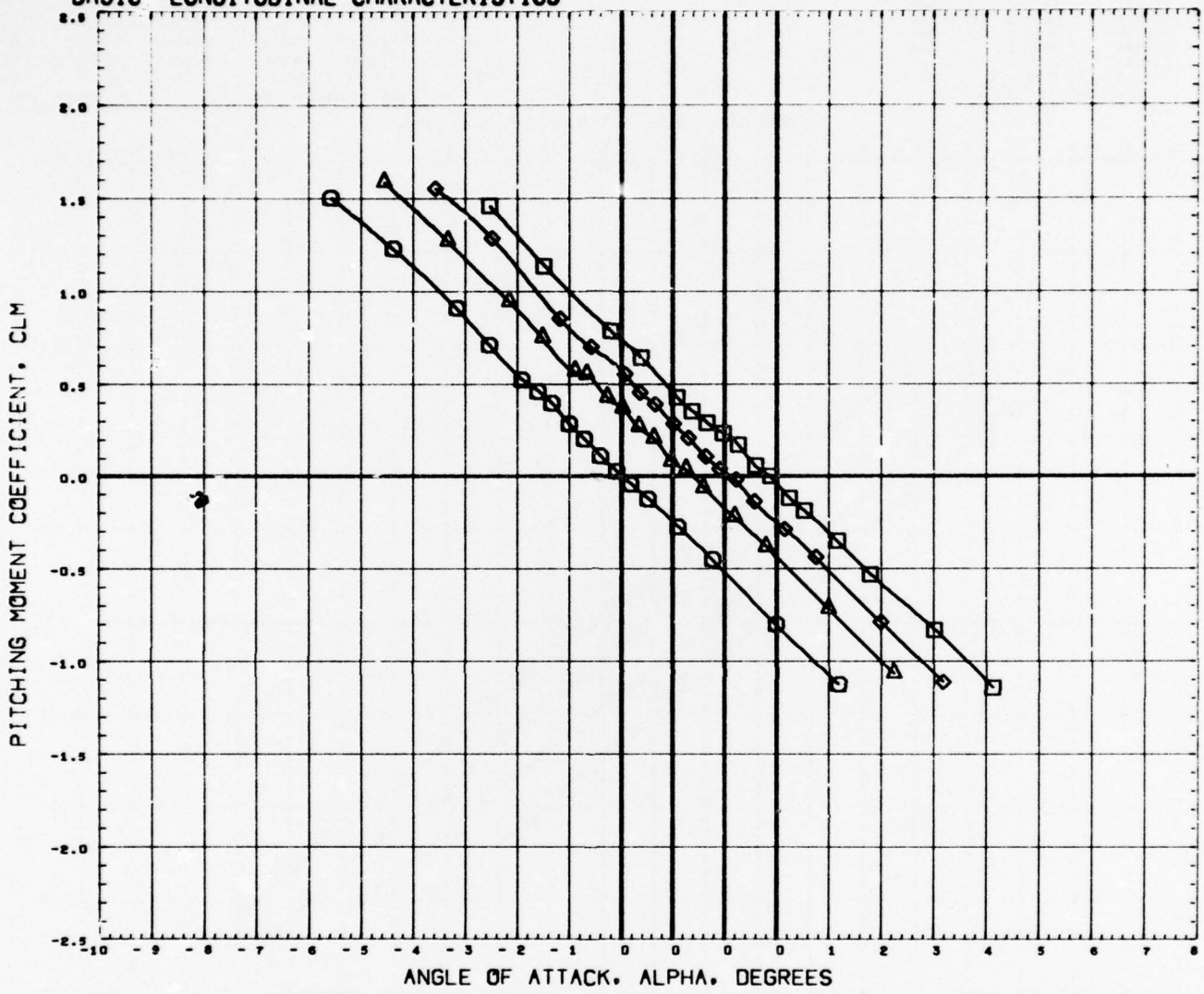


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	LS-LGH	3.250	S-WDTH	0.200
◇	0.947	R-WDTH	1.000	C-LGTH	5.000
□	1.002	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.049	PHI	0.000	N-LGTH	1.500
△	1.102	LS-LGH	3.250	S-WDTH	0.200
◇	1.199	R-WDTH	1.000	C-LGTH	5.000
□	1.300	C-DIA	0.400		

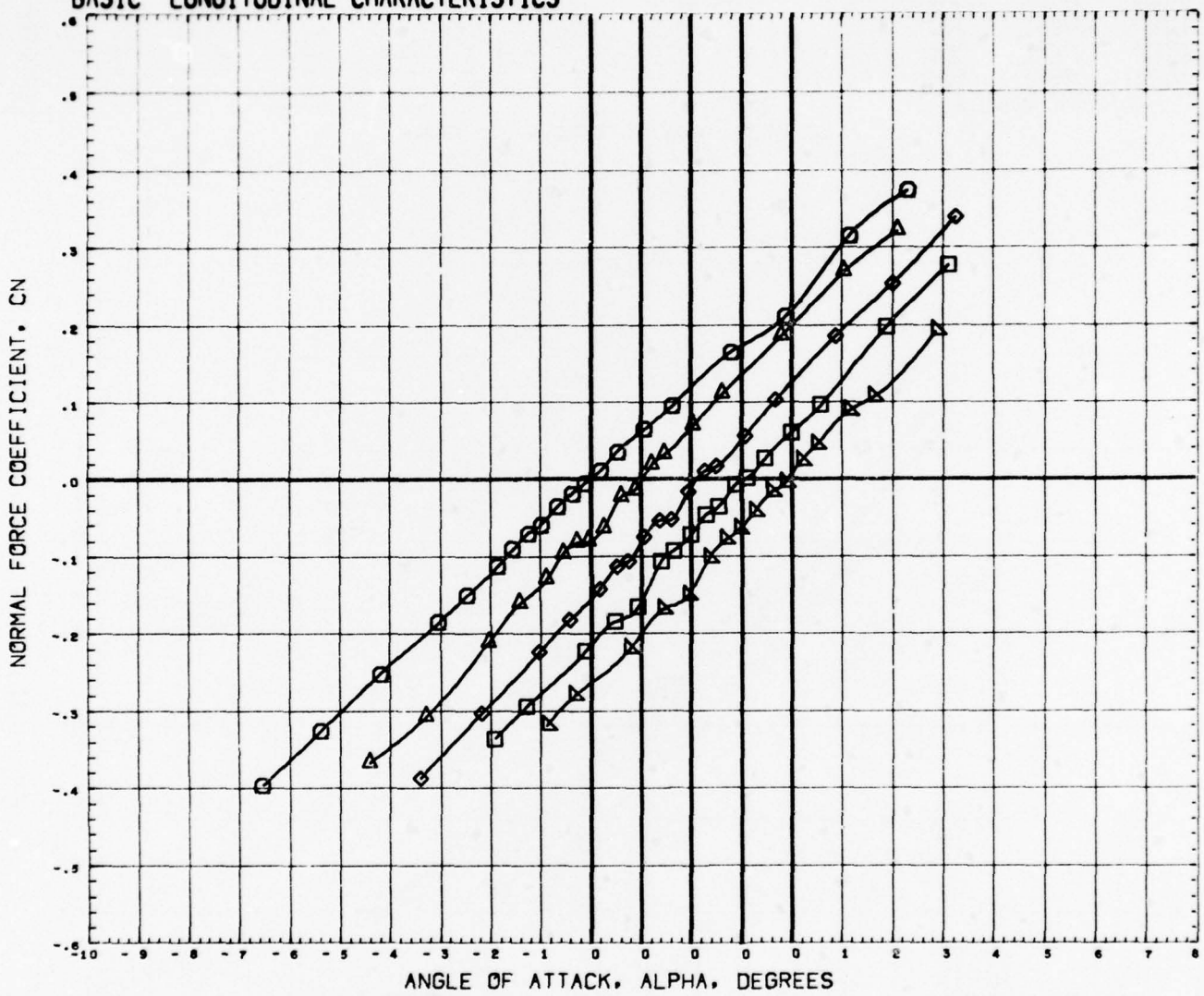
REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL.N1R2C1 (RTAR09) 10 MAR 72 PAGE 76

BASIC LONGITUDINAL CHARACTERISTICS



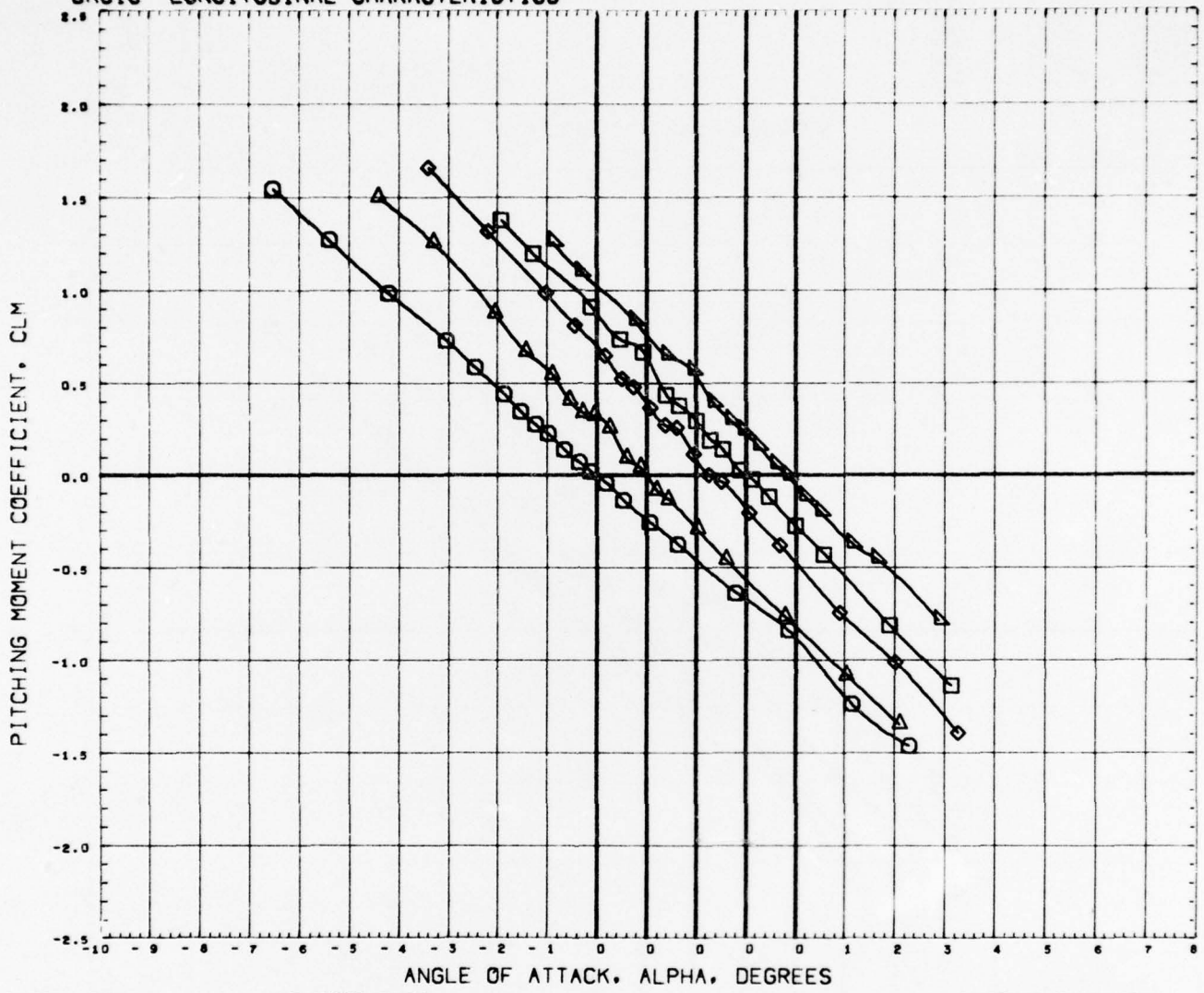
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.949	PHI	0.000	M-LGTH	2.250
△	1.005	LS-LGH	3.000	S-WDTH	0.200
◇	1.099	R-WDTH	1.000	C-LGTH	5.000
□	1.198	C-DIA	0.400		
◸	1.296				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



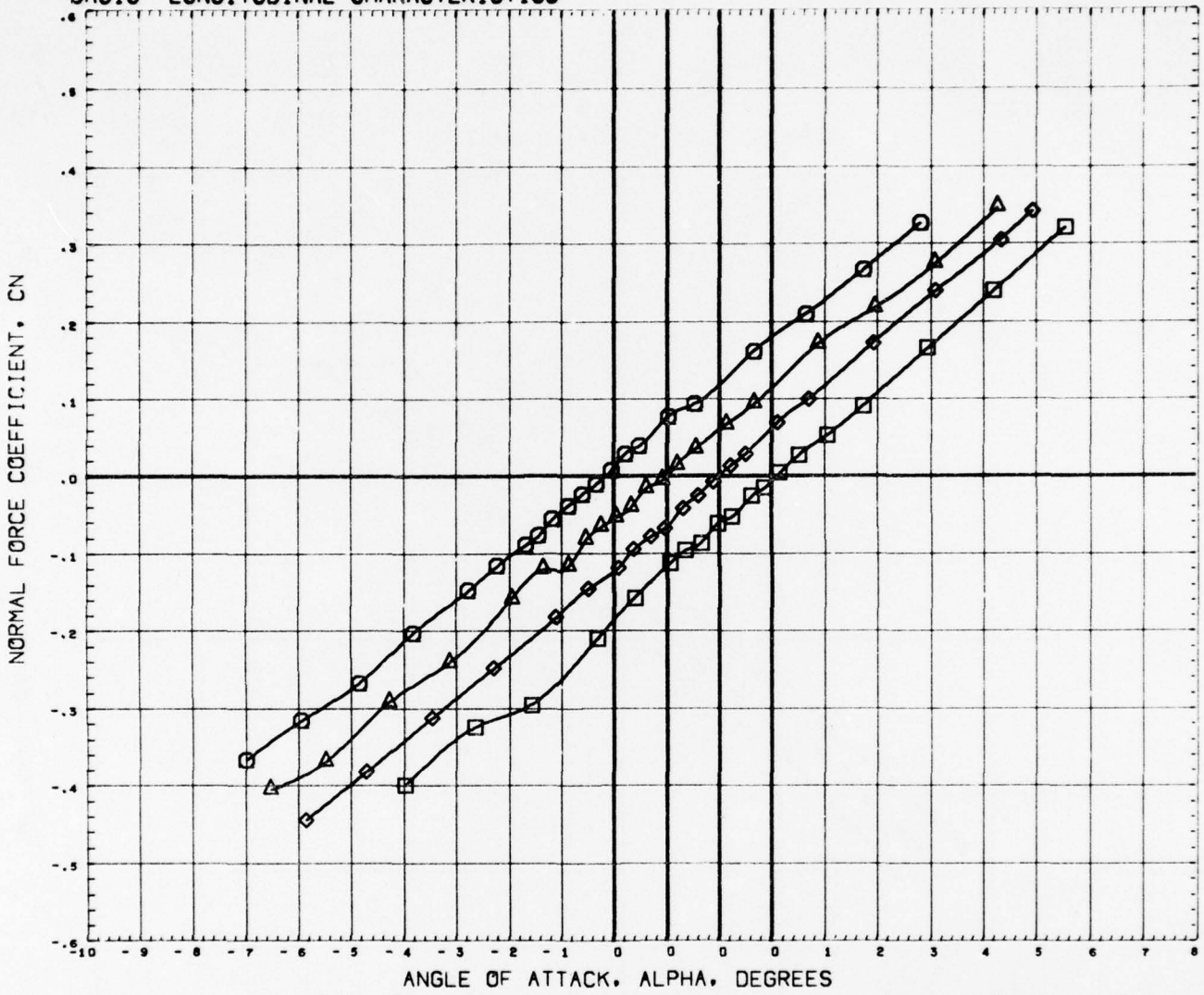
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.949	PHI	0.000	M-LGTH	2.250
△	1.005	LS-LGH	3.000	S-WDTH	0.200
◇	1.099	R-WDTH	1.000	C-LGTH	5.000
□	1.198	C-DIA	0.400		
▽	1.296				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



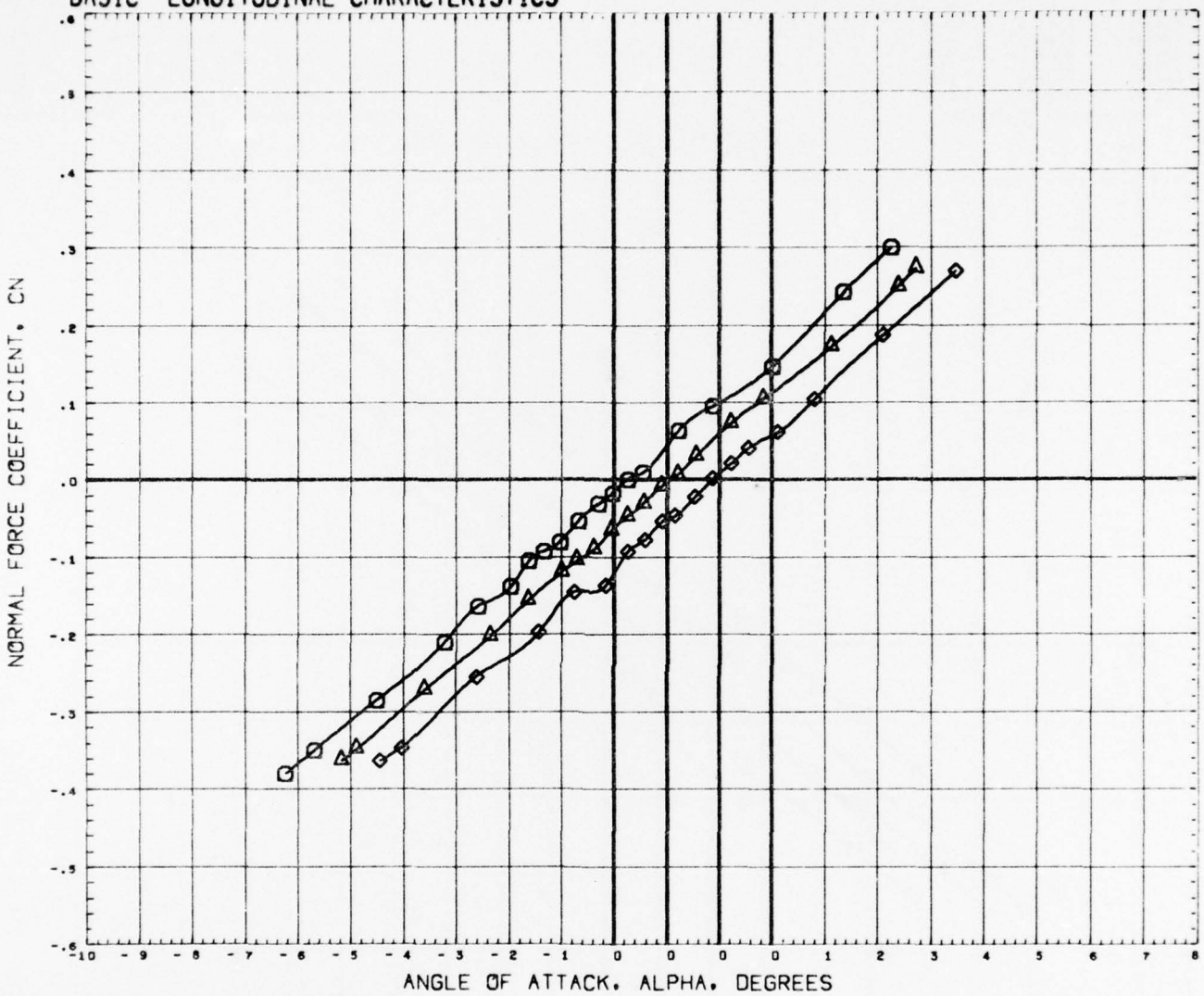
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.499	PHI	0.000	M-LGTH	2.250
△	0.801	LS-LGH	2.500	S-WDTH	0.400
◇	0.957	R-WDTH	1.000	C-LGTH	5.000
□	1.000	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.102	PHI	0.000	M-LGTH	2.250
△	1.197	LS-LGH	2.500	S-WDTH	0.400
◇	1.298	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.400		

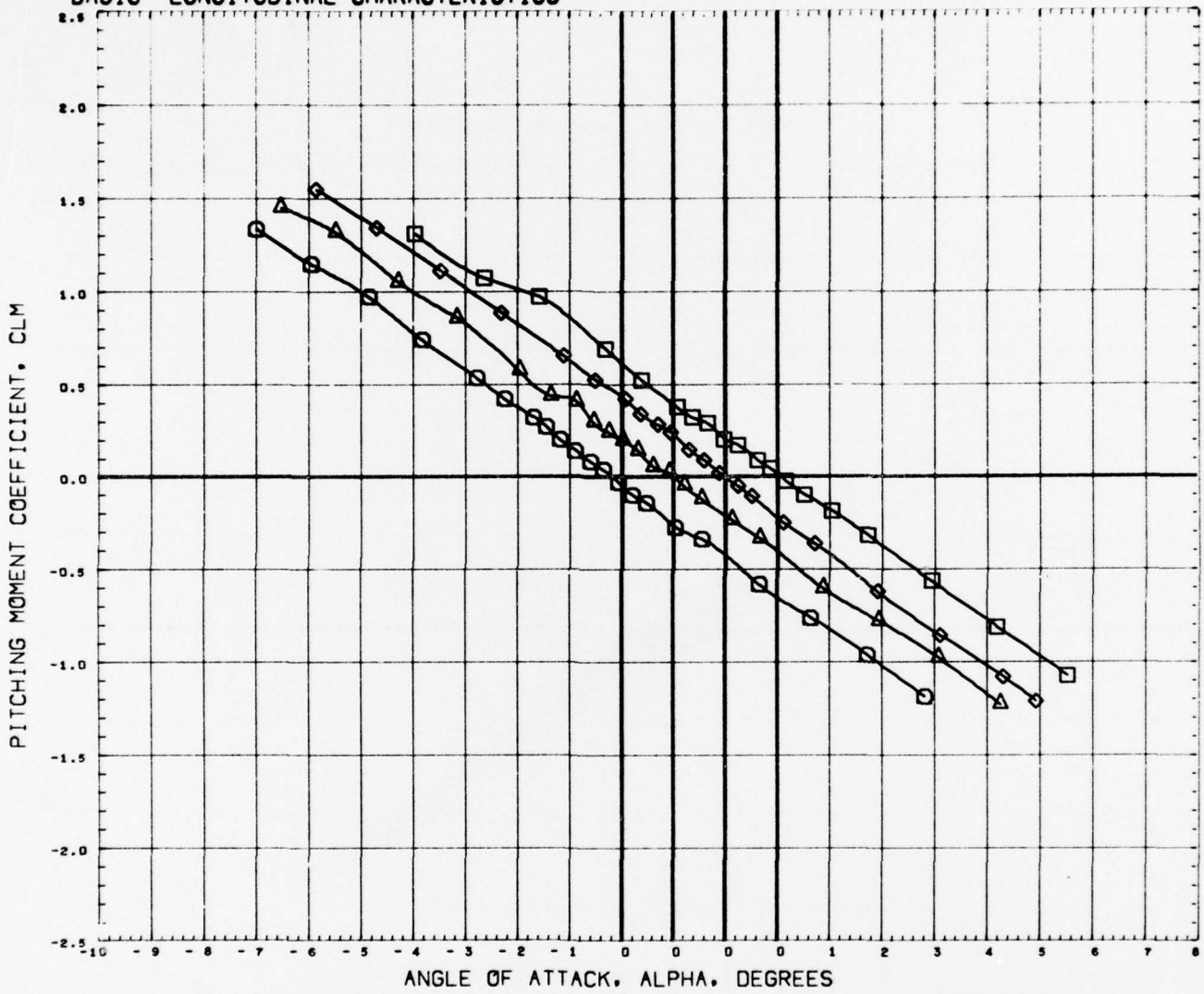
REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL.N1R5C1 (RTAR14) 10 MAR 72 PAGE 80

BASIC LONGITUDINAL CHARACTERISTICS

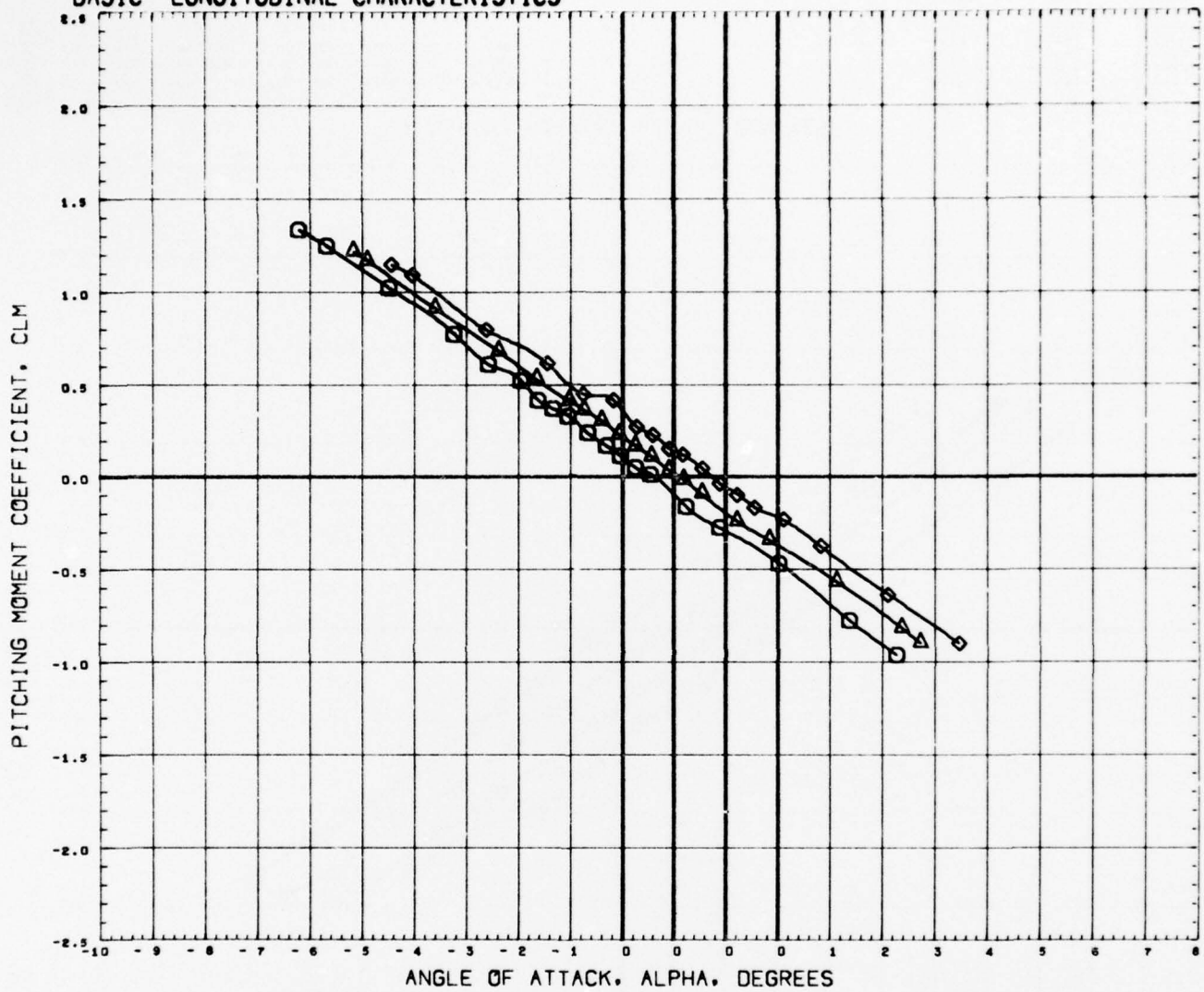


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.499	PHI	0.000	M-LGTH	2.250
△	0.801	LS-LGH	2.500	S-WDTH	0.400
◇	0.957	R-WDTH	1.000	C-LGTH	5.000
□	1.000	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.102	PHI	0.000	M-LGTH	2.250
△	1.197	LS-LGH	2.500	S-WDTH	0.400
◇	1.298	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.400		

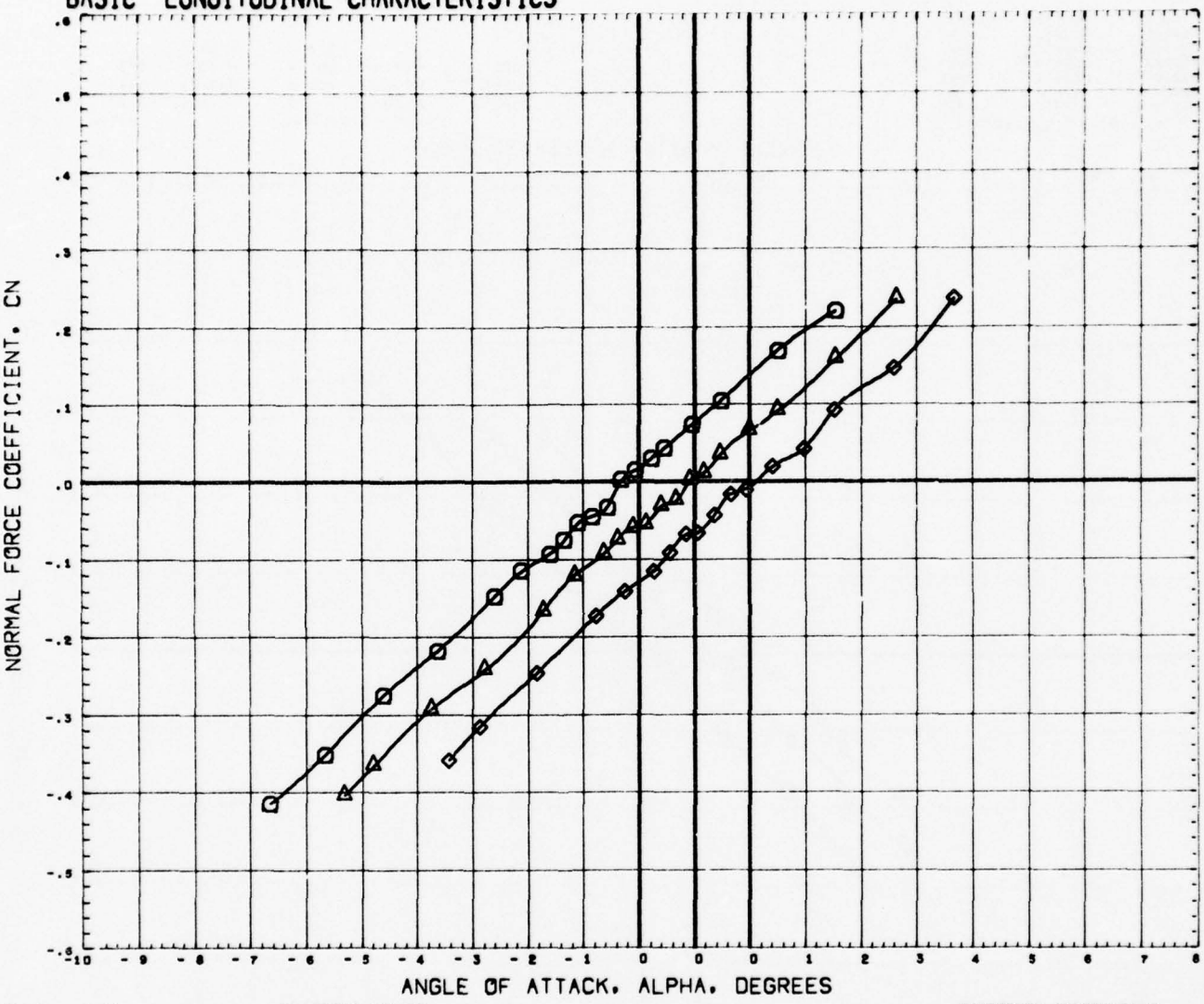
REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL.N1R5C1 (RTAR14) 10 MAR 72 PAGE 82

BASIC LONGITUDINAL CHARACTERISTICS

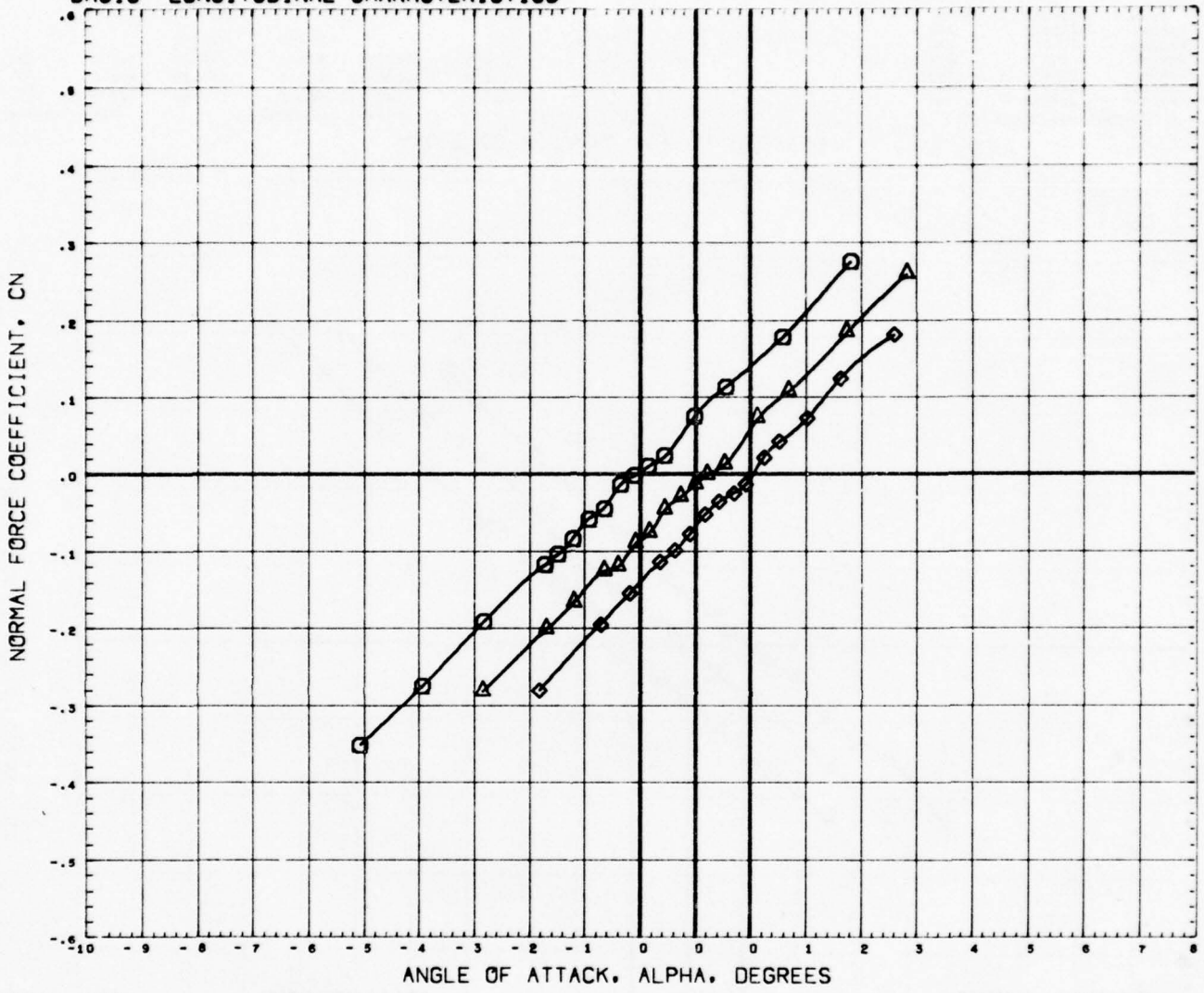


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	2.250
△	0.803	LS-LGH	4.000	S-WDTH	0.200
◇	0.946	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



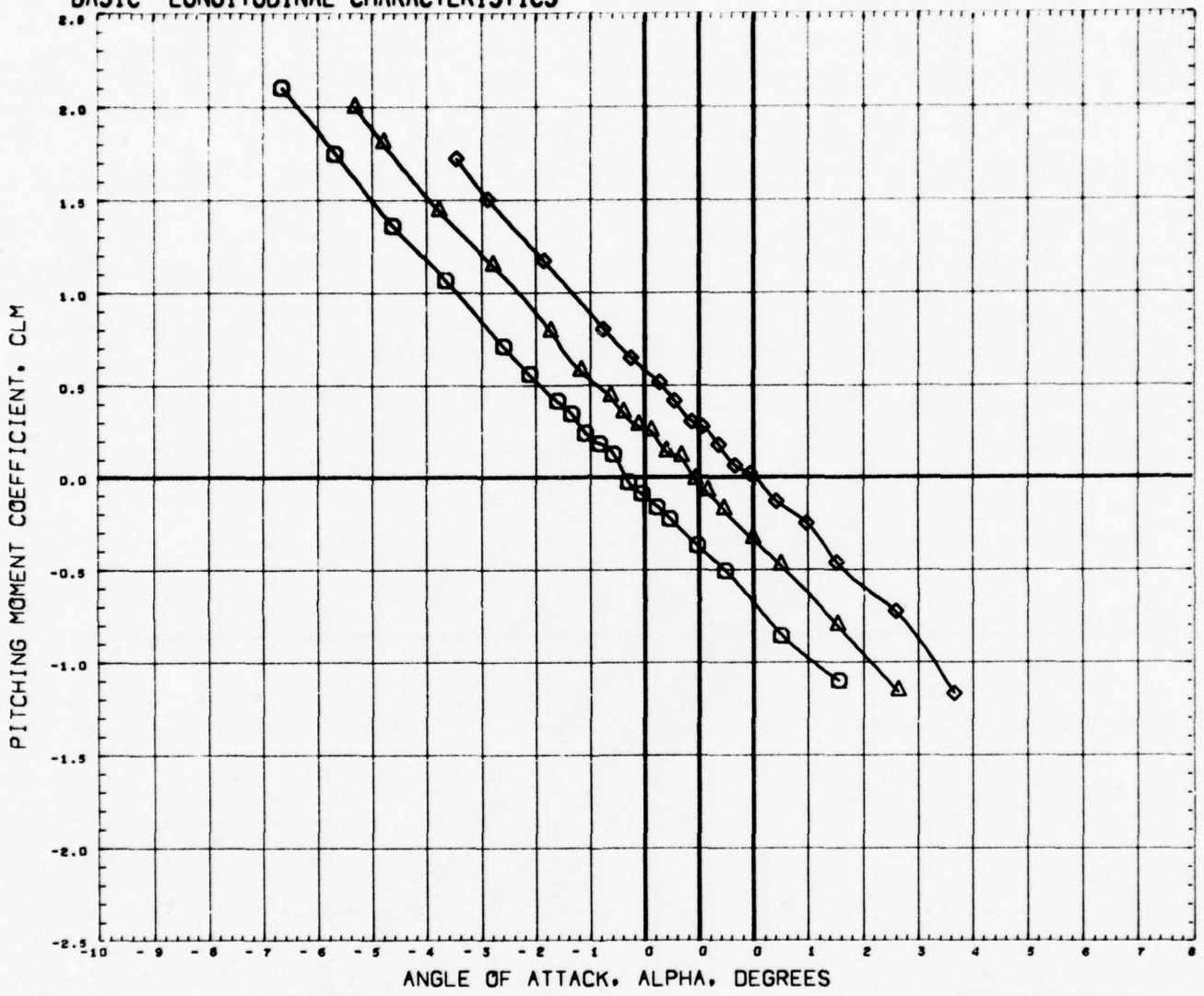
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.101	PHI	0.000	M-LGTH	2.250
△	1.199	LS-LGH	4.000	S-WDTH	0.200
◇	1.298	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	2.250
△	0.803	LS-LGH	4.000	S-WDTH	0.200
◇	0.946	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
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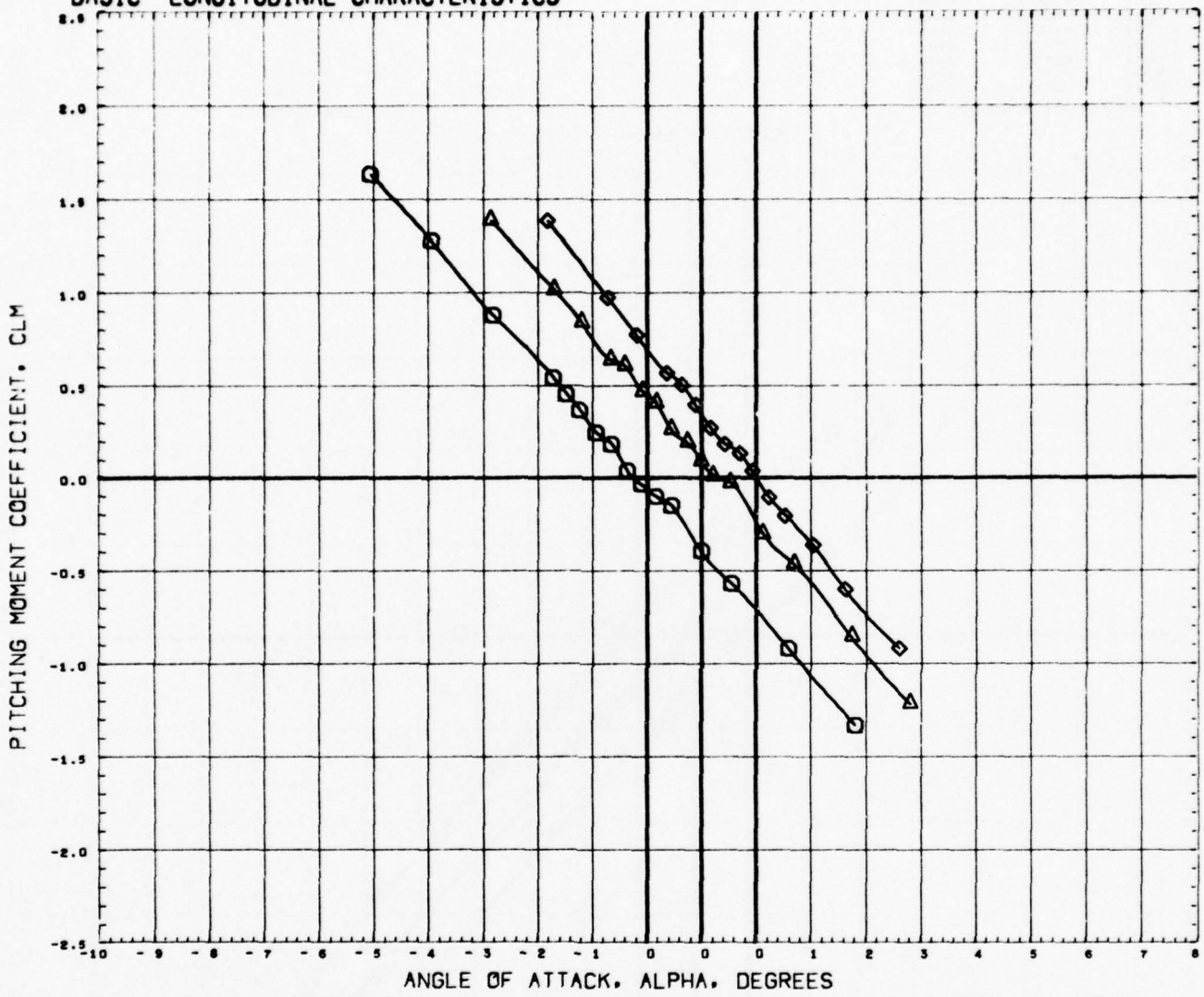
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



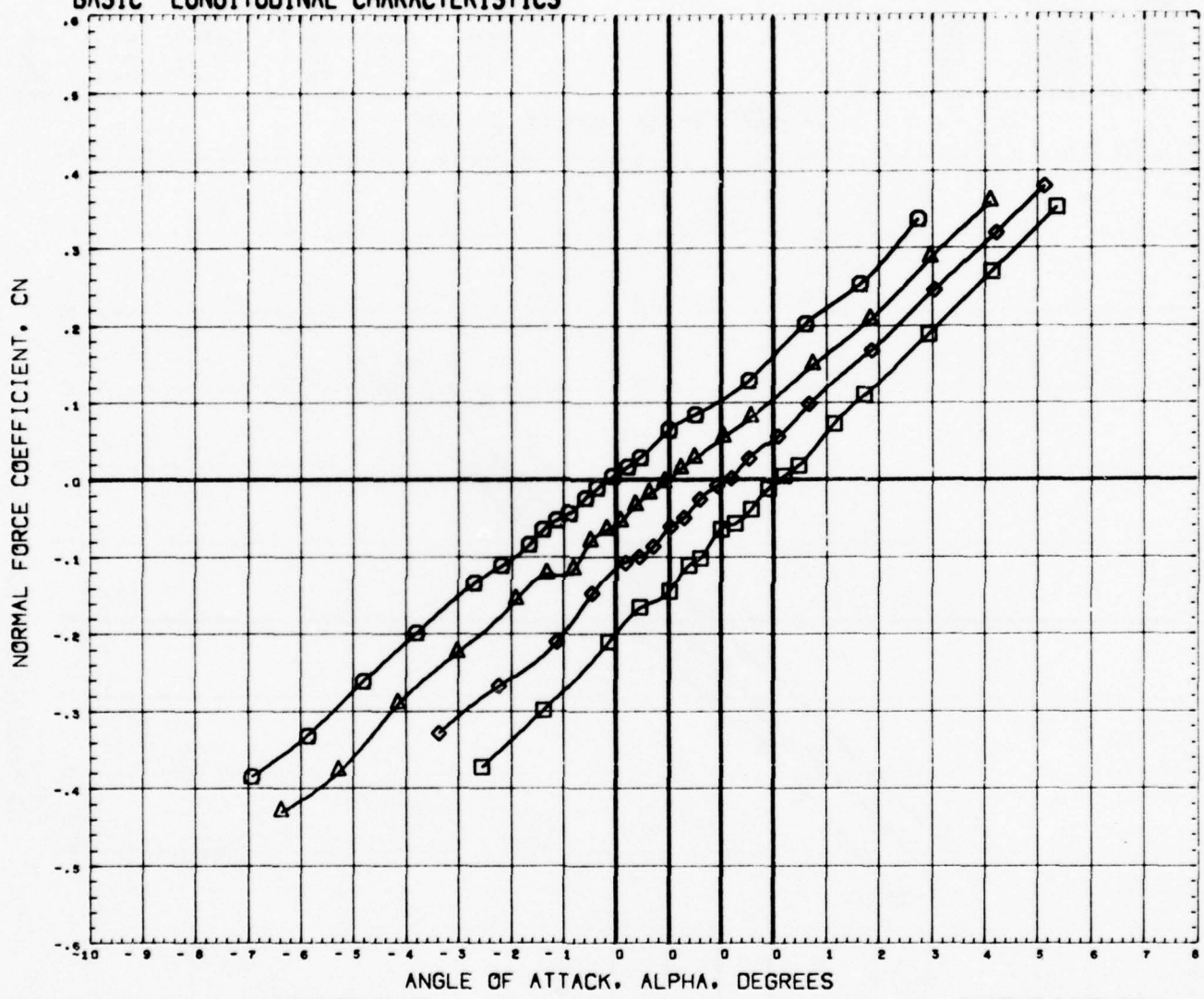
SYMBOL	MACH		PARAMETRIC VALUES		
○	1.101	PHI	0.000	M-LGTH	2.250
△	1.199	LS-LGH	4.000	S-WDTH	0.200
◇	1.298	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.802	LS-LGH	3.250	S-WDTH	0.200
◇	0.950	R-WDTH	1.000	C-LGTH	5.000
□	1.003	C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION

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LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
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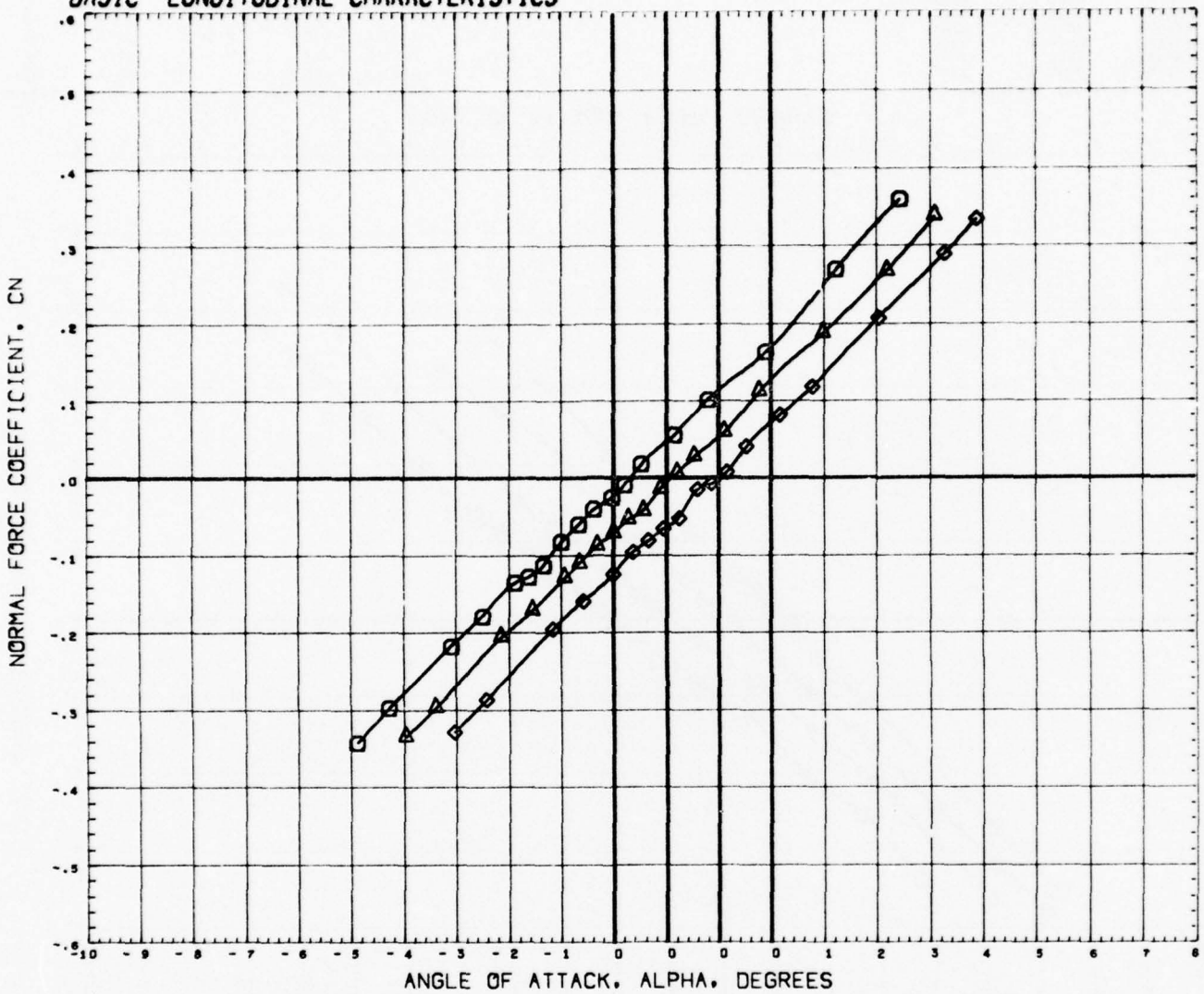
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.096	PHI	0.000	M-LGTH	1.500
△	1.200	LS-LGH	3.250	S-WDTH	0.200
◇	1.300	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
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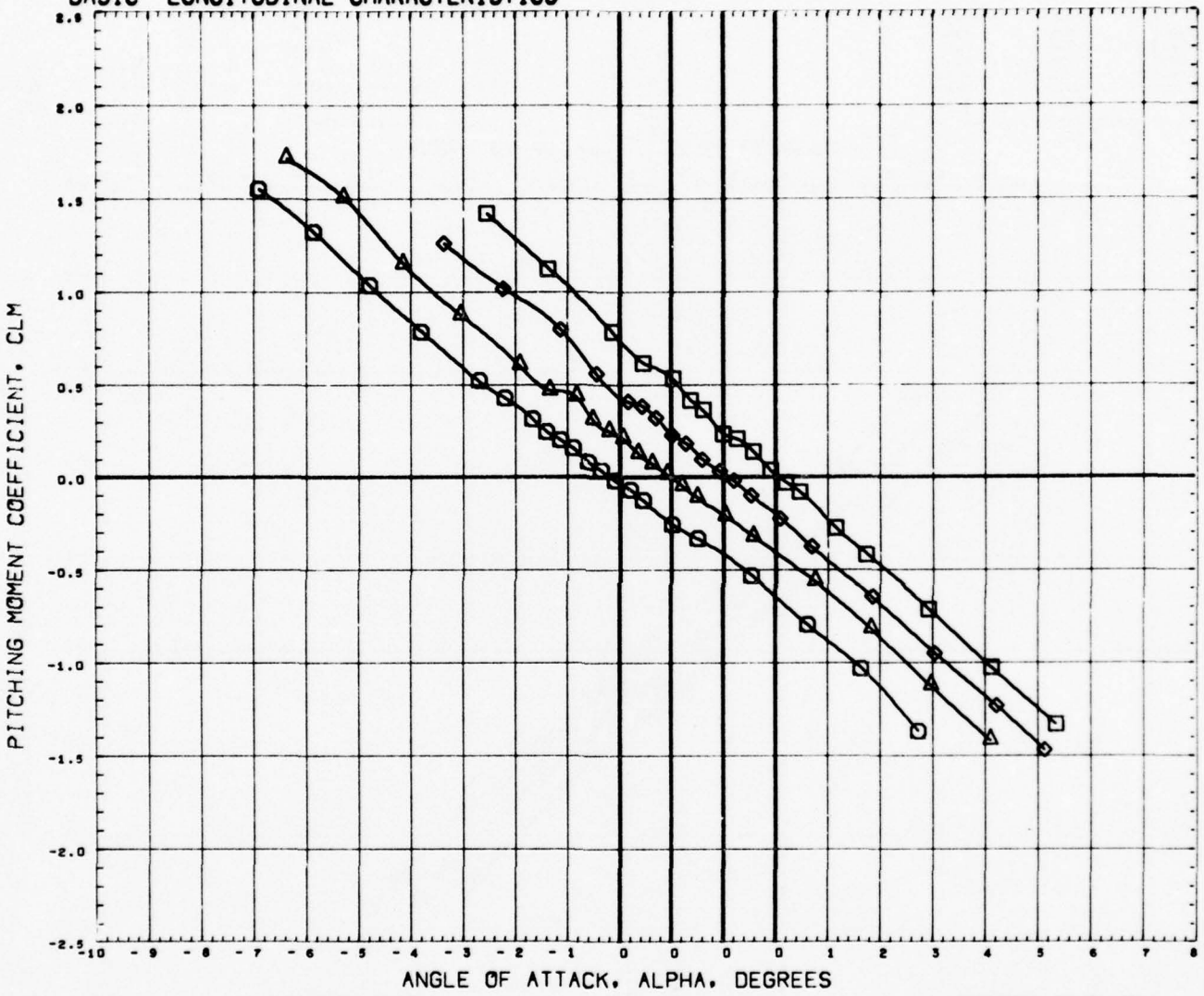
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.802	LS-LGH	3.250	S-WDTH	0.200
◇	0.950	R-WDTH	1.000	C-LGTH	5.000
□	1.003	C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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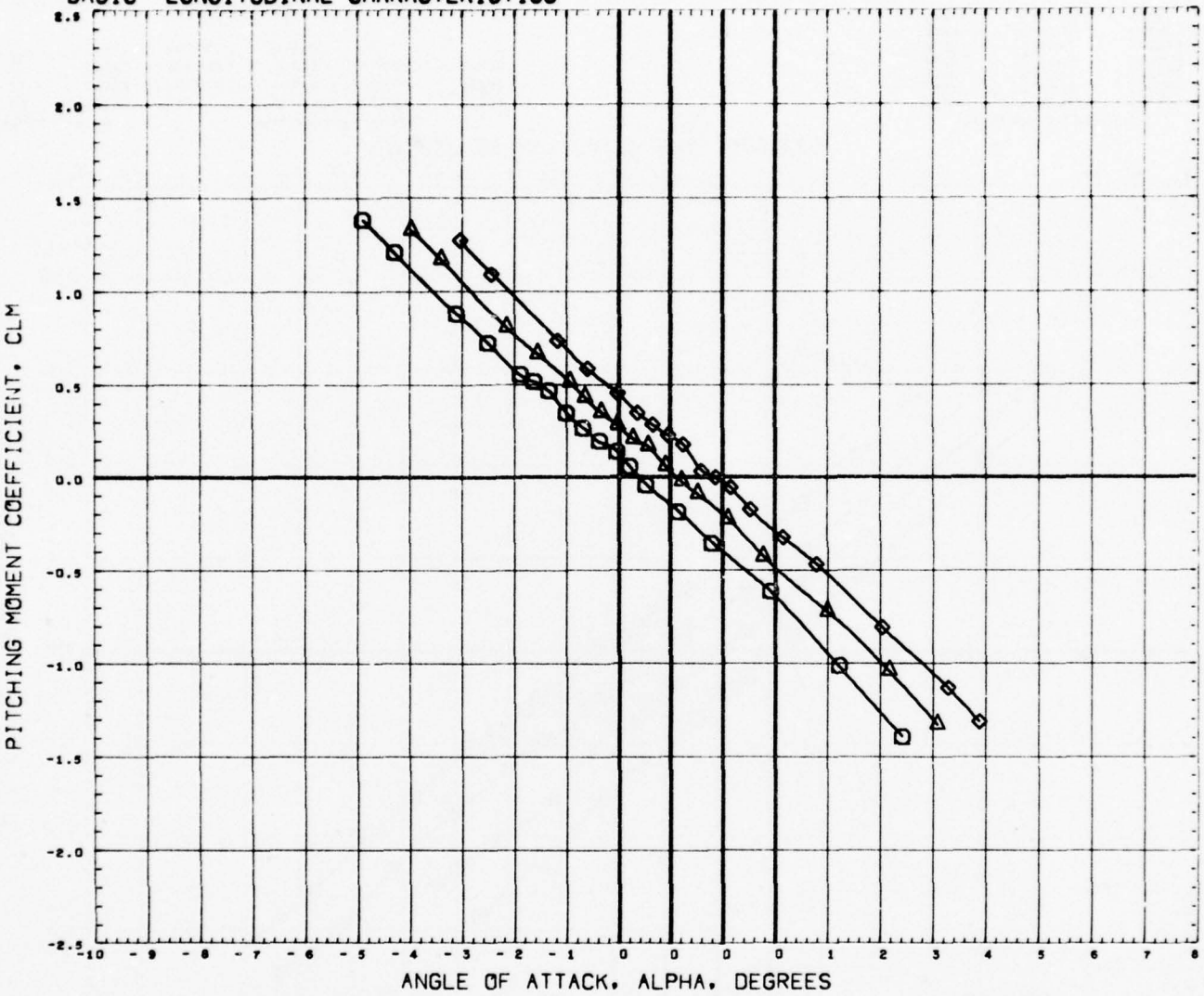
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.096	PHI	0.000	M-LGTH	1.500
△	1.200	LS-LGH	3.250	S-WDTH	0.200
◇	1.300	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

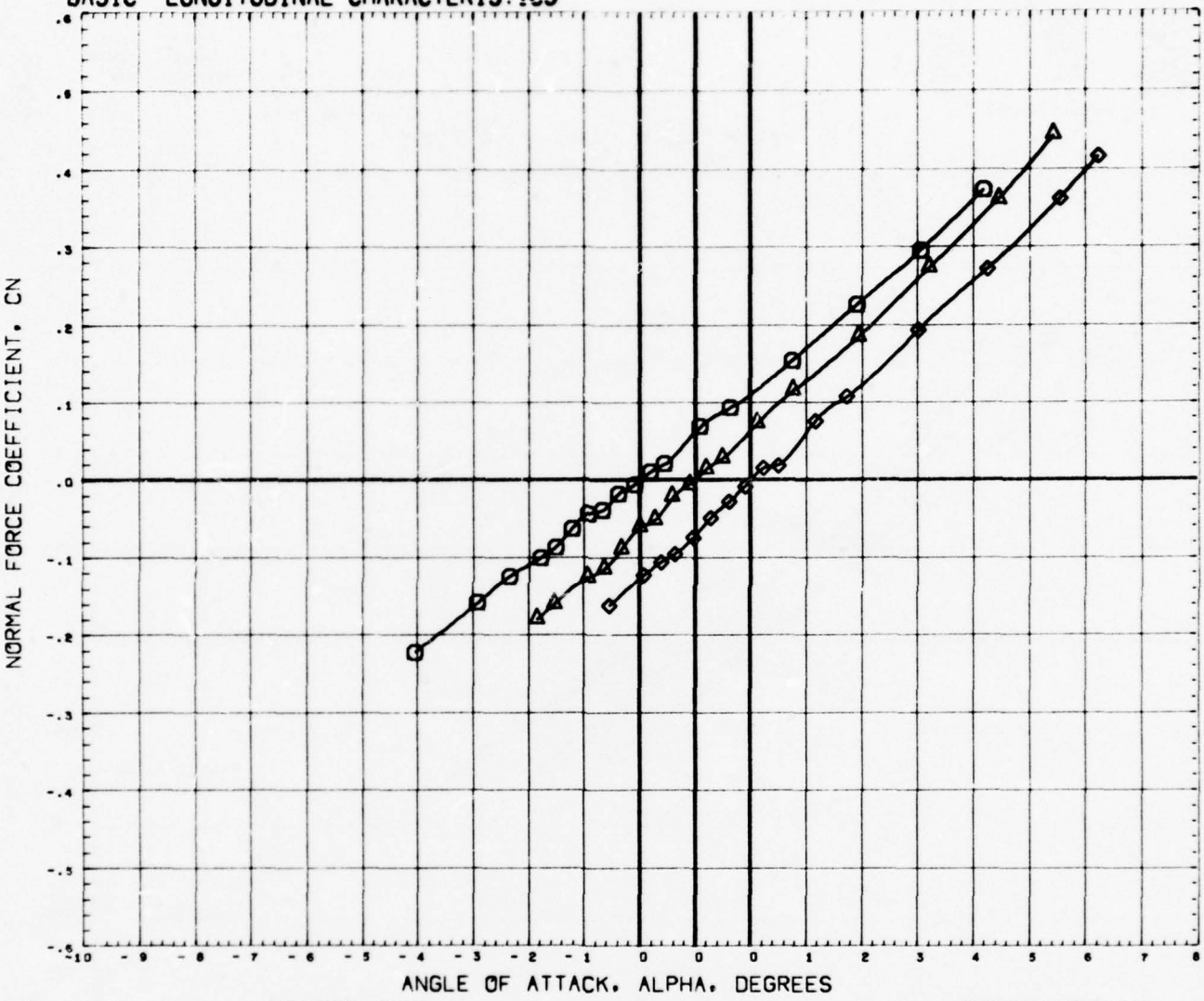
REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL.N1R2C2 (RTAR18) 10 MAR 72 PAGE 90

BASIC LONGITUDINAL CHARACTERISTICS

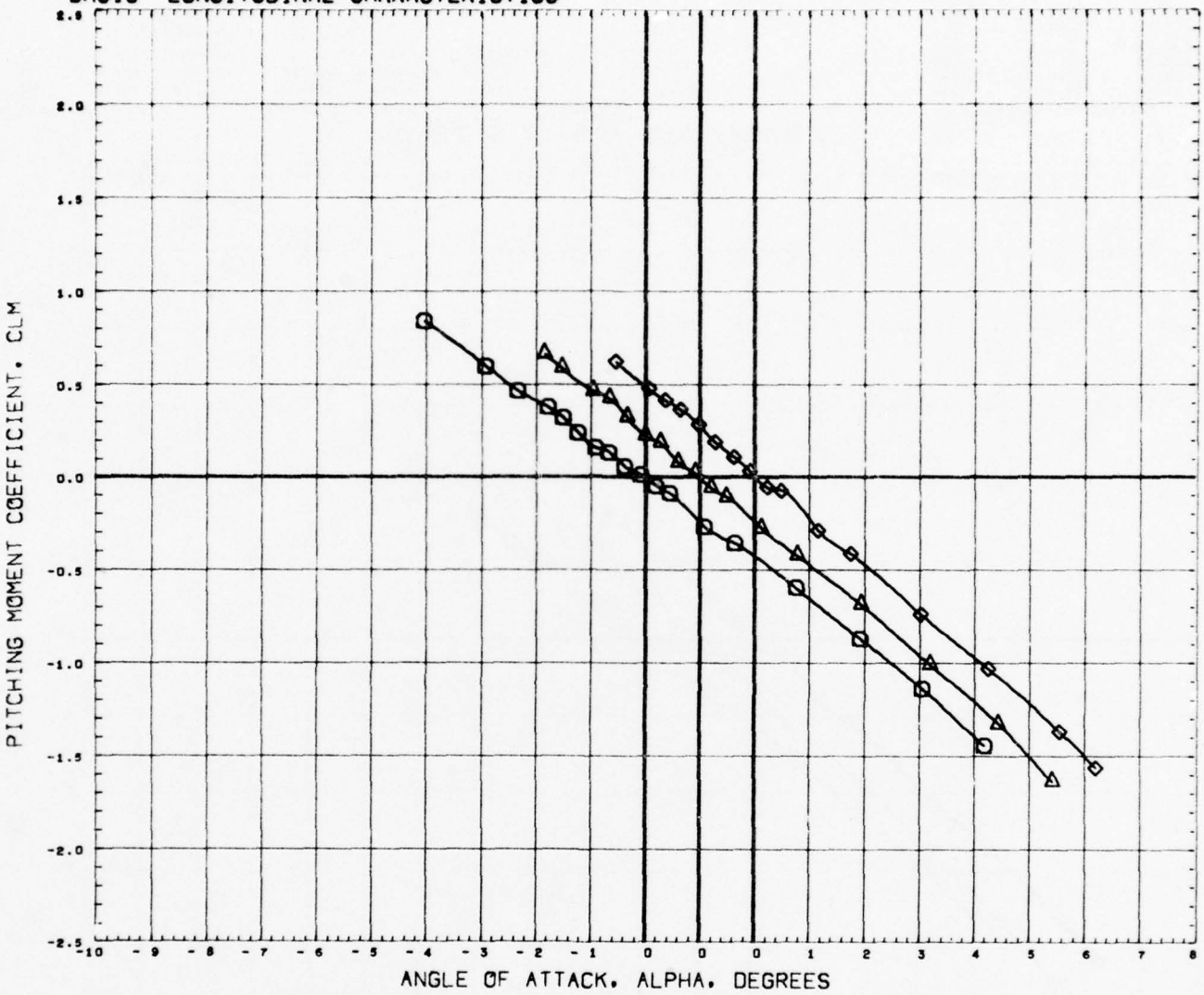


SYMBOL	MACH		PARAMETRIC VALUES		
○	0.802	PHI	45.000	M-LGTH	1.500
△	0.997	LS-LGH	3.250	S-WDTH	0.200
◇	1.200	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



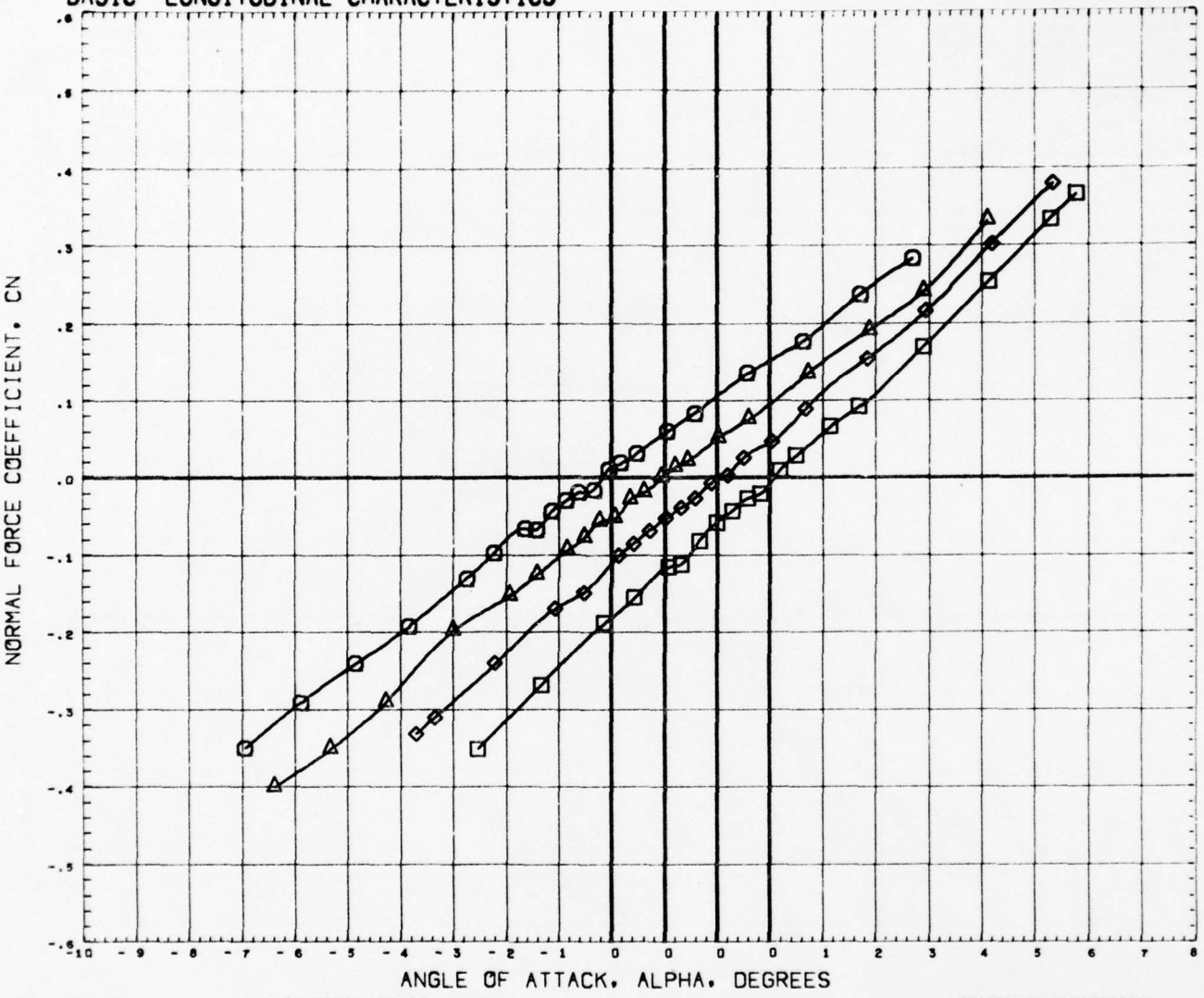
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.802	PHI	45.000	M-LGTH	1.500
△	0.997	LS-LGH	3.250	S-WDTH	0.200
◇	1.200	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



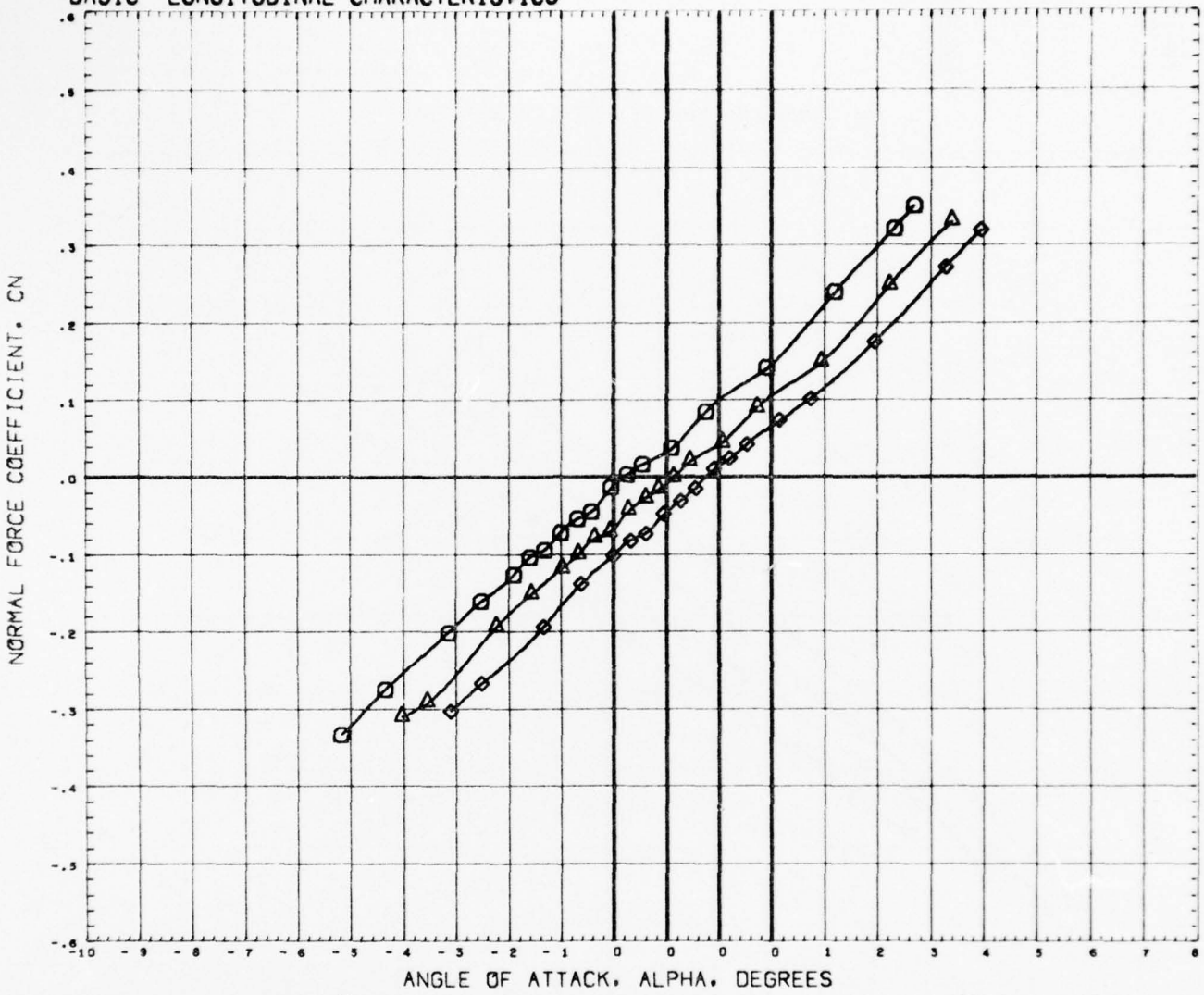
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	1.500
△	0.803	LS-LGH	3.250	S-WDTH	0.200
◇	0.947	R-WDTH	1.000	C-LGTH	5.000
□	0.998	C-DIA	0.670		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS

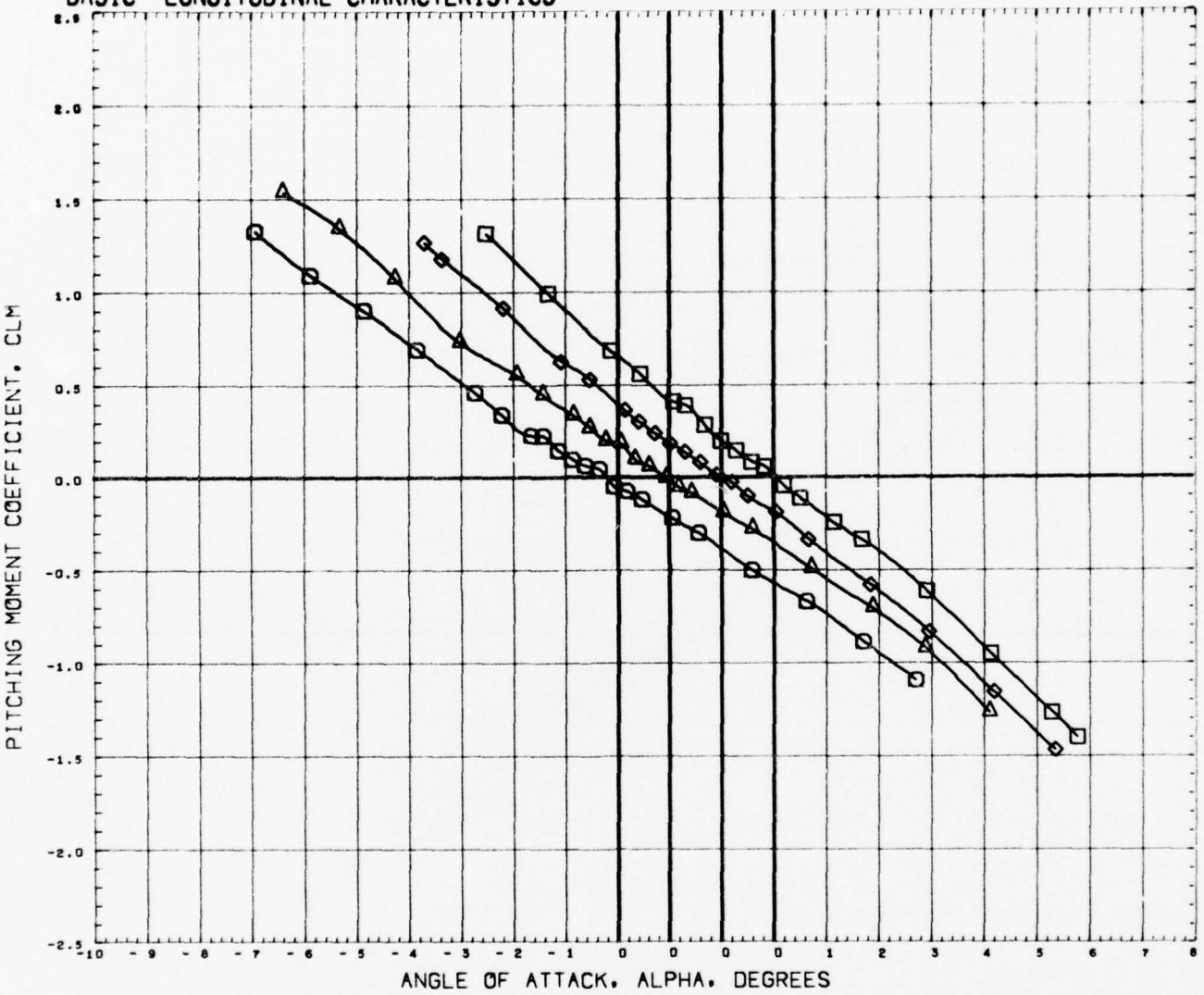


SYMBOL	MACH		PARAMETRIC VALUES		
○	1.100	PHI	0.000	M-LGTH	1.500
△	1.199	LS-LGH	3.250	S-WDTH	0.200
◇	1.299	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.670		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



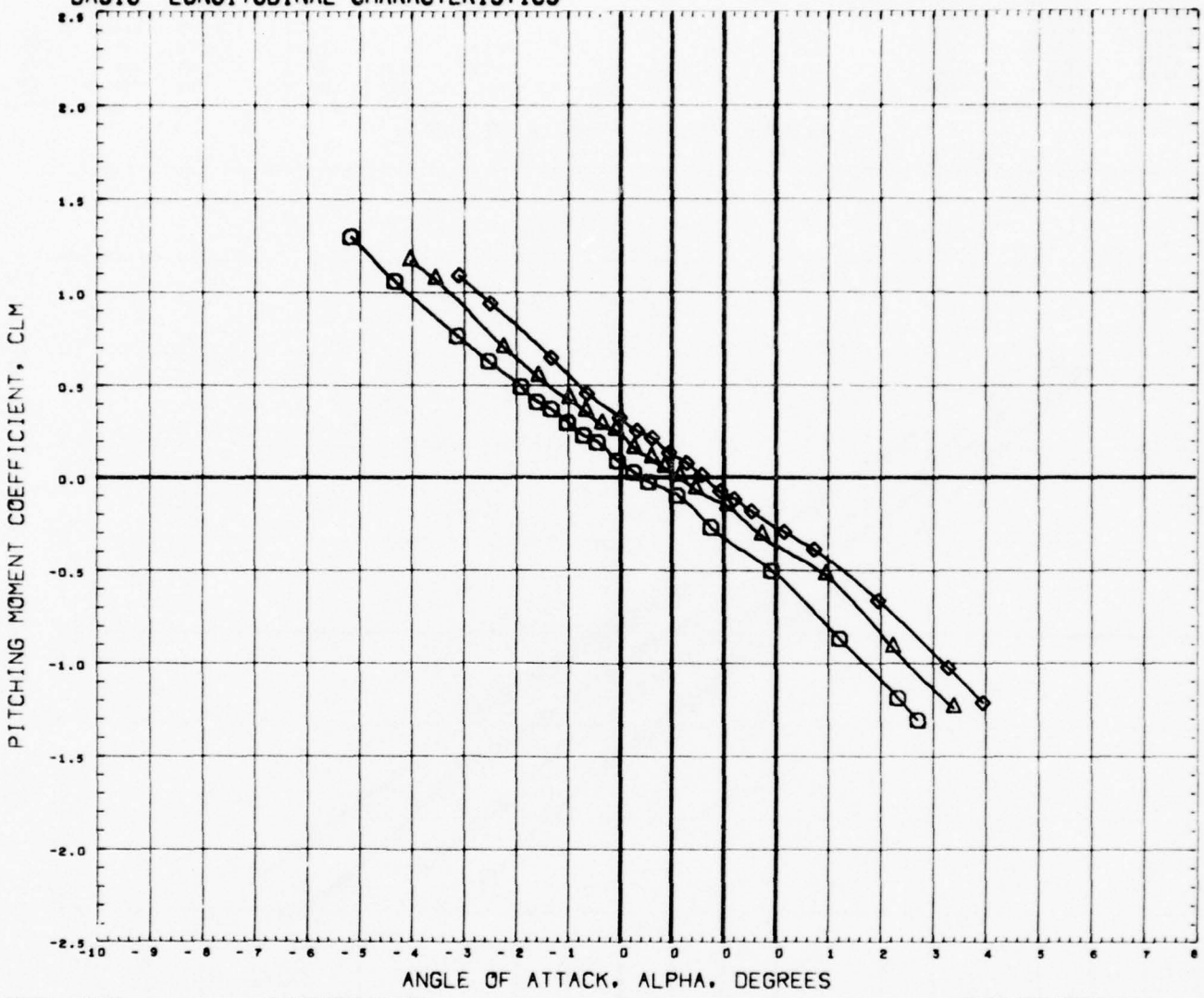
SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	1.500
△	0.803	LS-LGH	3.250	S-WDTH	0.200
◇	0.947	R-WDTH	1.000	C-LGTH	5.000
□	0.998	C-DIA	0.670		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL.N1R2C3 (RTAR20) 10 MAR 72 PAGE 95

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.100	PHI	0.000	M-LGTH	1.500
△	1.199	LS-LGH	3.250	S-WDTH	0.200
◇	1.299	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.670		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
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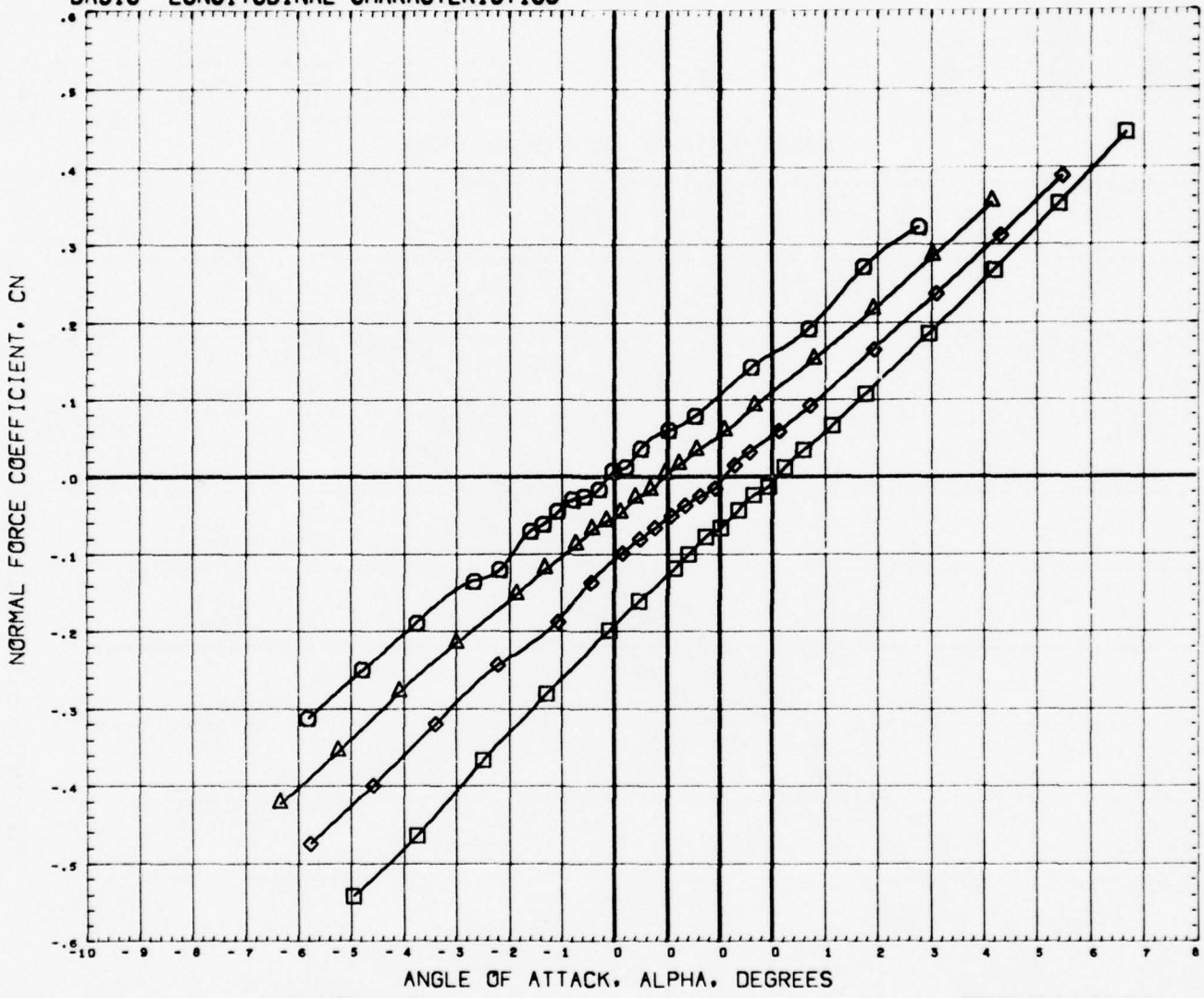
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	LS-LGH	3.250	S-WDTH	0.200
◇	0.950	R-WDTH	1.000	C-LGTH	6.500
□	1.002	C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
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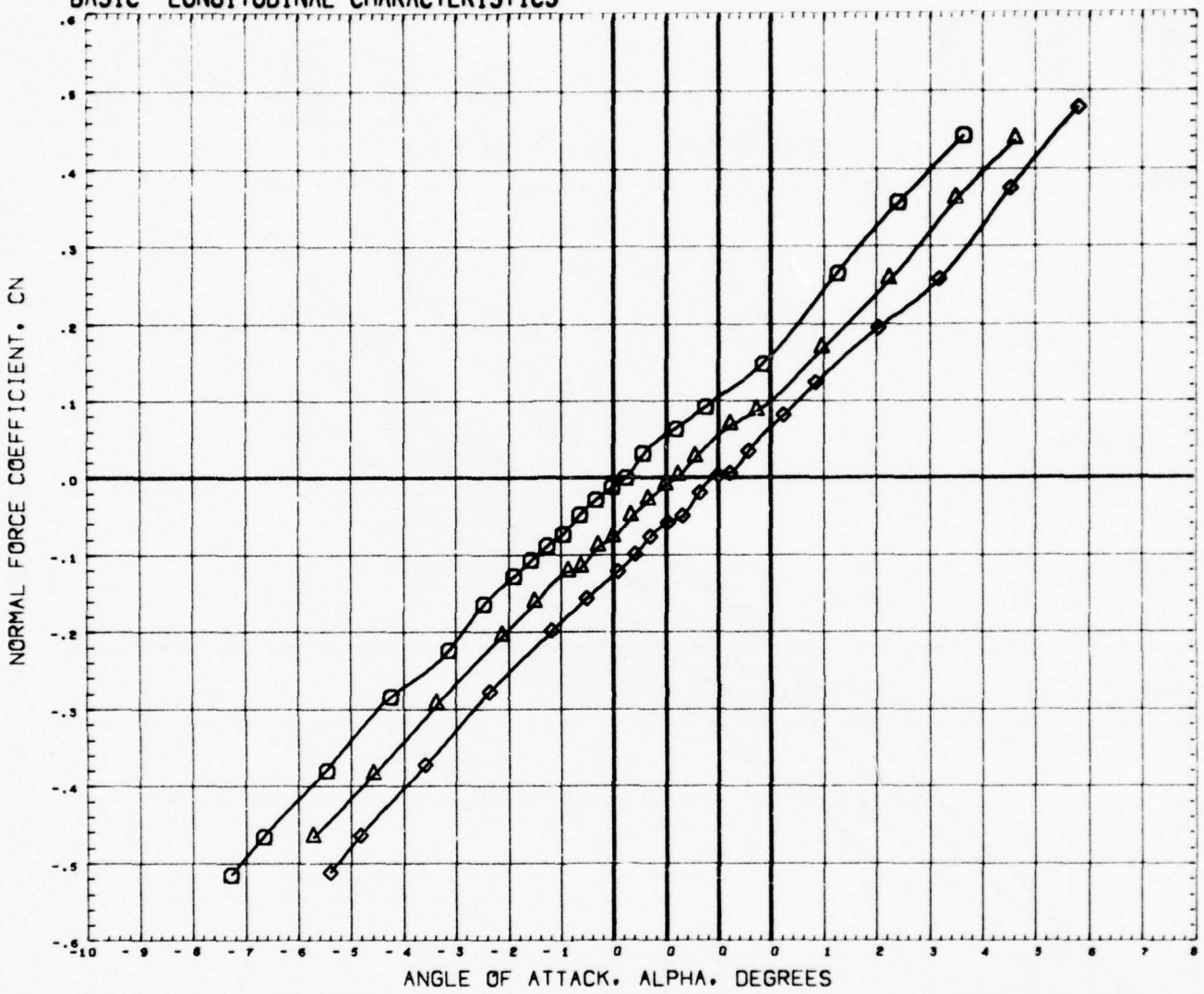
BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.101	PHI	0.000	M-LGTH	1.500
△	1.197	LS-LGH	3.250	S-WDTH	0.200
◇	1.297	R-WDTH	1.000	C-LGTH	6.500
		C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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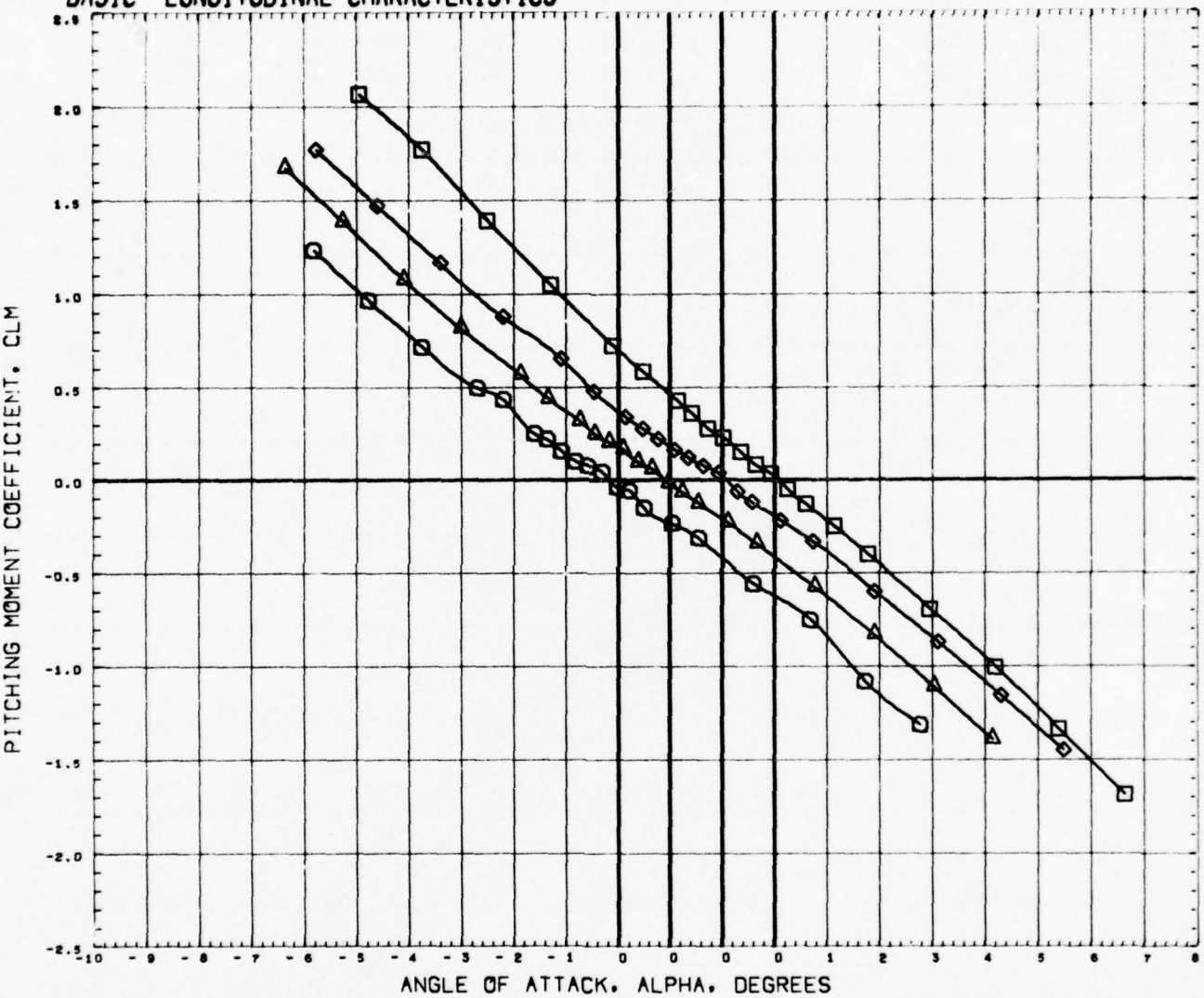
BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.500	PHI	0.000	M-LGTH	1.500
△	0.801	LS-LGH	5.250	S-WDTH	0.200
◇	0.950	R-WDTH	1.000	C-LGTH	6.500
□	1.002	C-DIA	0.500		

REFERENCE FILE

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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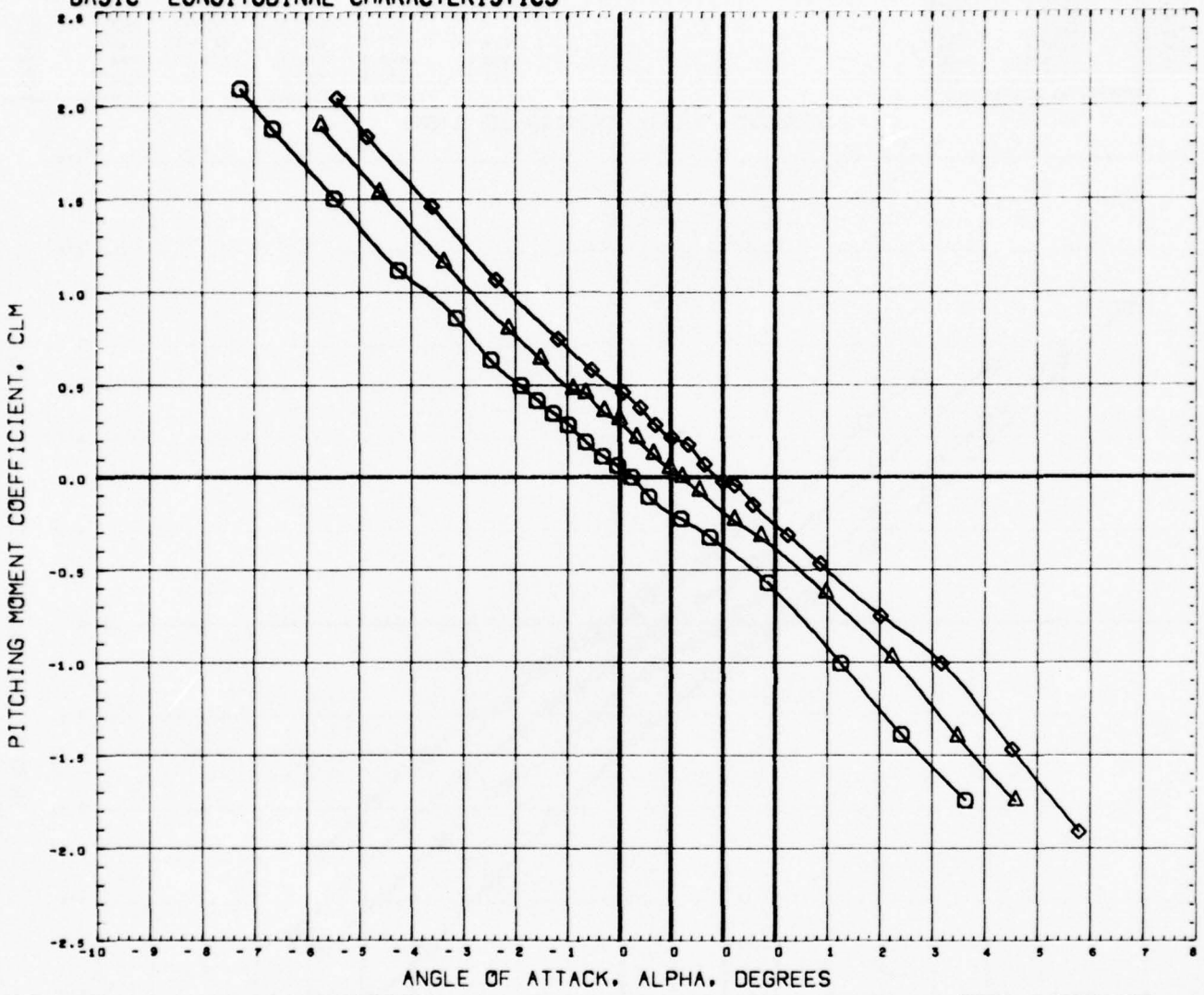
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.101	PHI	0.000	M-LGTH	1.500
△	1.197	LS-LGH	3.250	S-WDTH	0.200
◇	1.297	R-WDTH	1.000	C-LGTH	6.500
		C-DIA	0.500		

REFERENCE FILE

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SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
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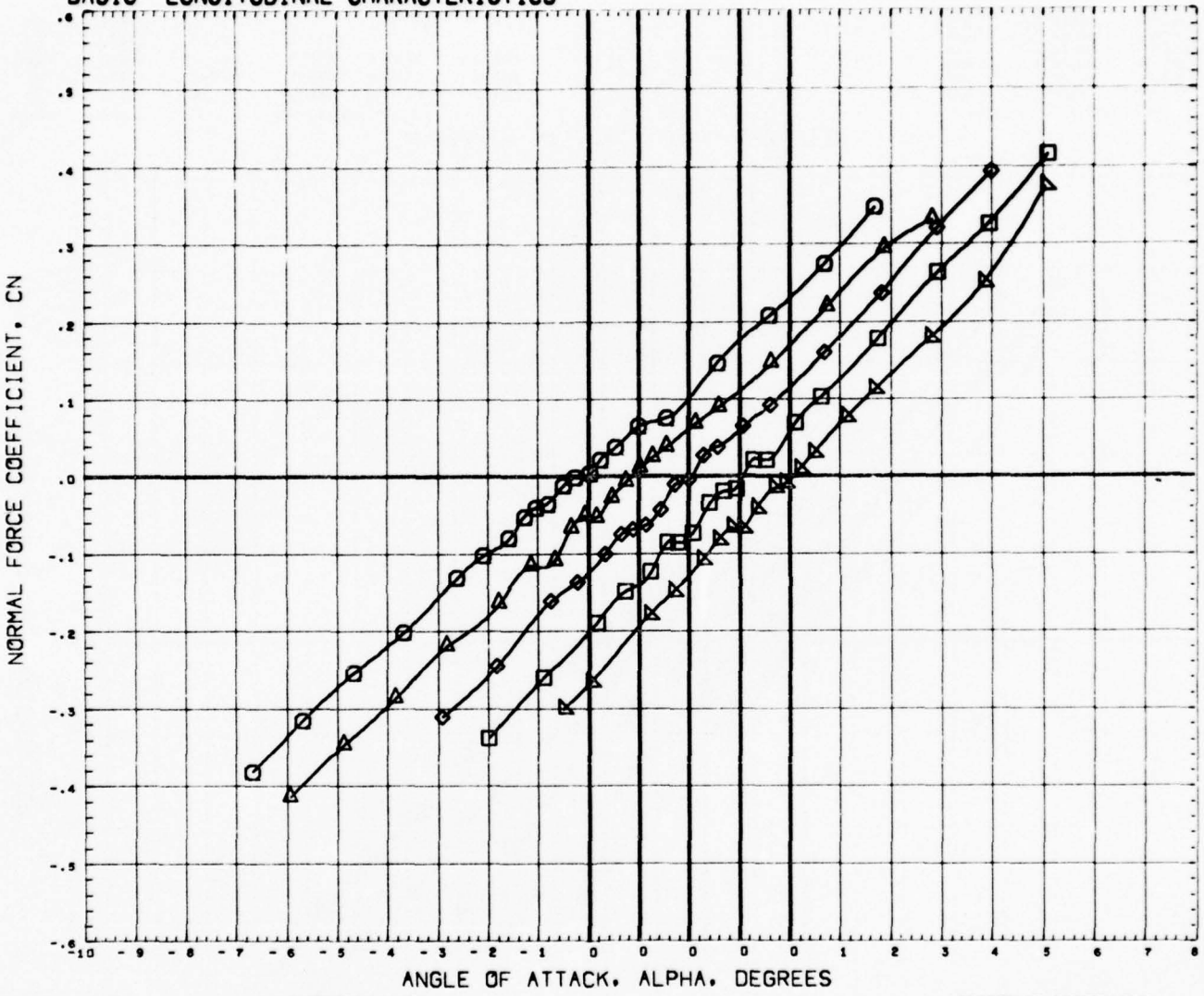
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.503	PHI	0.000	M-LGTH	2.250
△	0.804	LS-LGH	4.000	S-WDTH	0.200
◇	0.958	R-WDTH	1.000	C-LGTH	6.500
□	0.999	C-DIA	0.500		
▽	1.099				

REFERENCE FILE

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LREF	3.0000	INCHES
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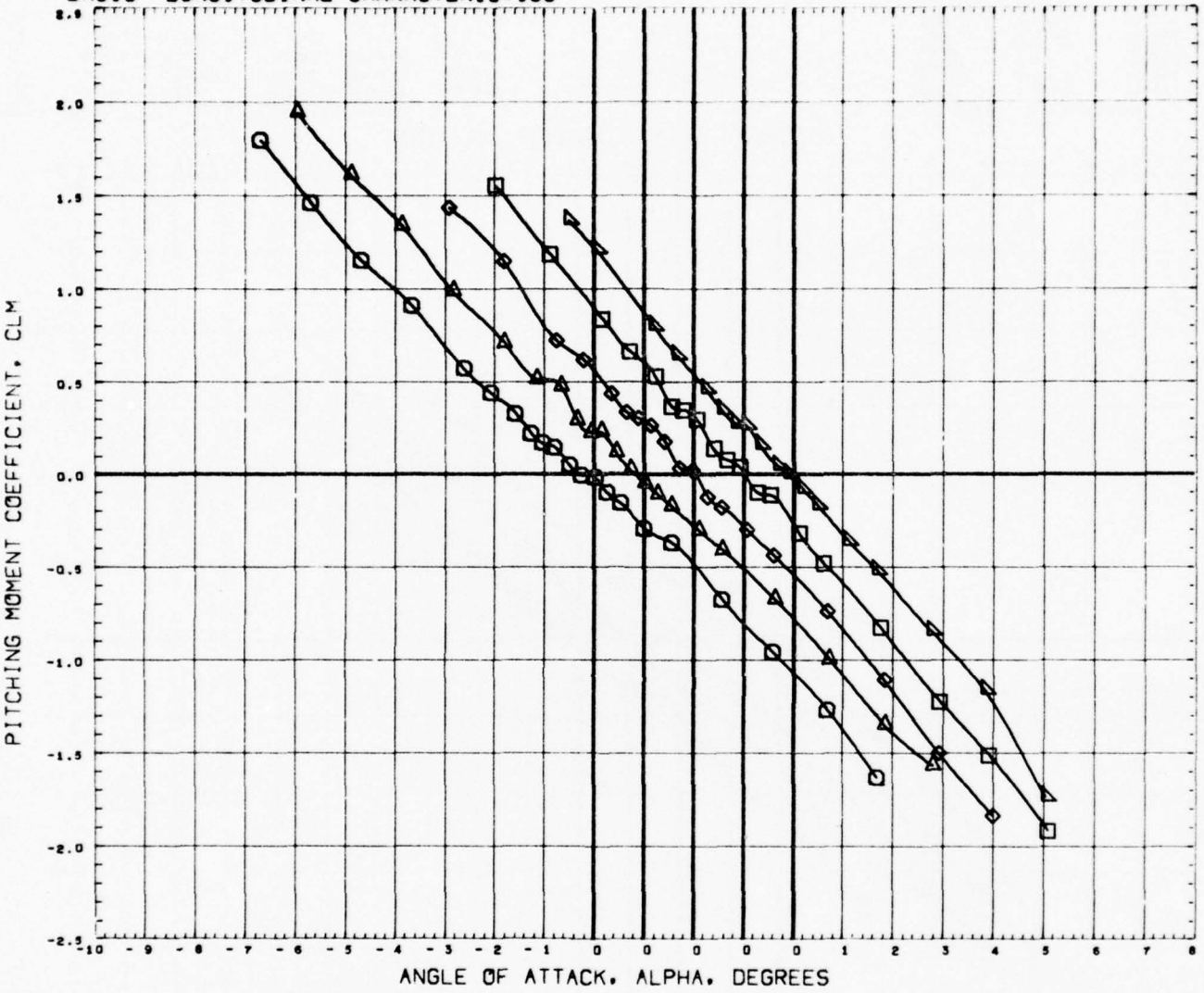
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.503	PHI	0.000	M-LGTH	2.250
△	0.804	LS-LGH	4.000	S-WDTH	0.200
◇	0.958	R-WDTH	1.000	C-LGTH	6.500
□	0.999	C-DIA	0.500		
▽	1.099				

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
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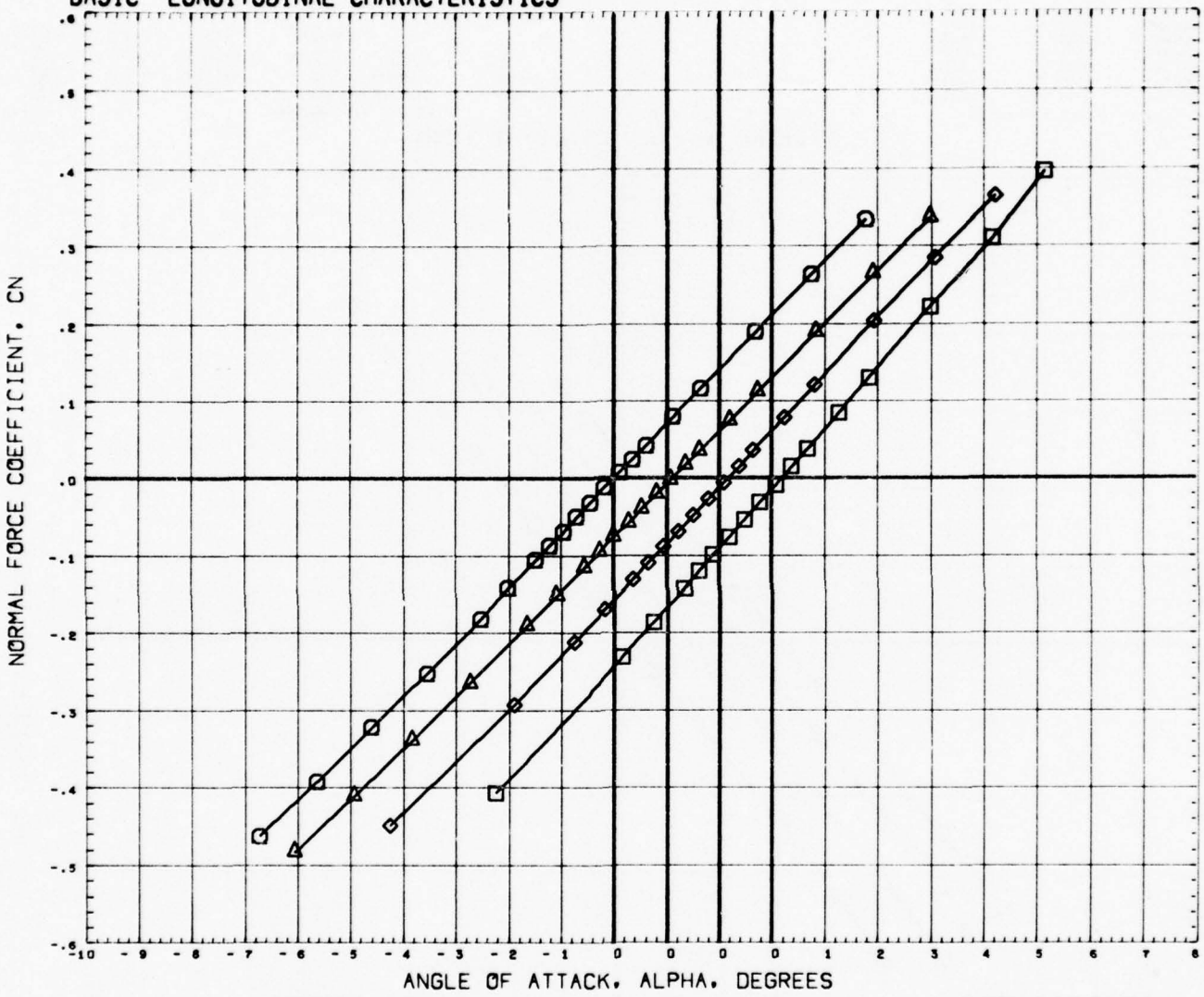
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	1.500
△	0.799	LS-LGH	3.250	S-WDTH	0.200
◇	0.948	R-WDTH	1.000	C-LGTH	5.000
□	0.999	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

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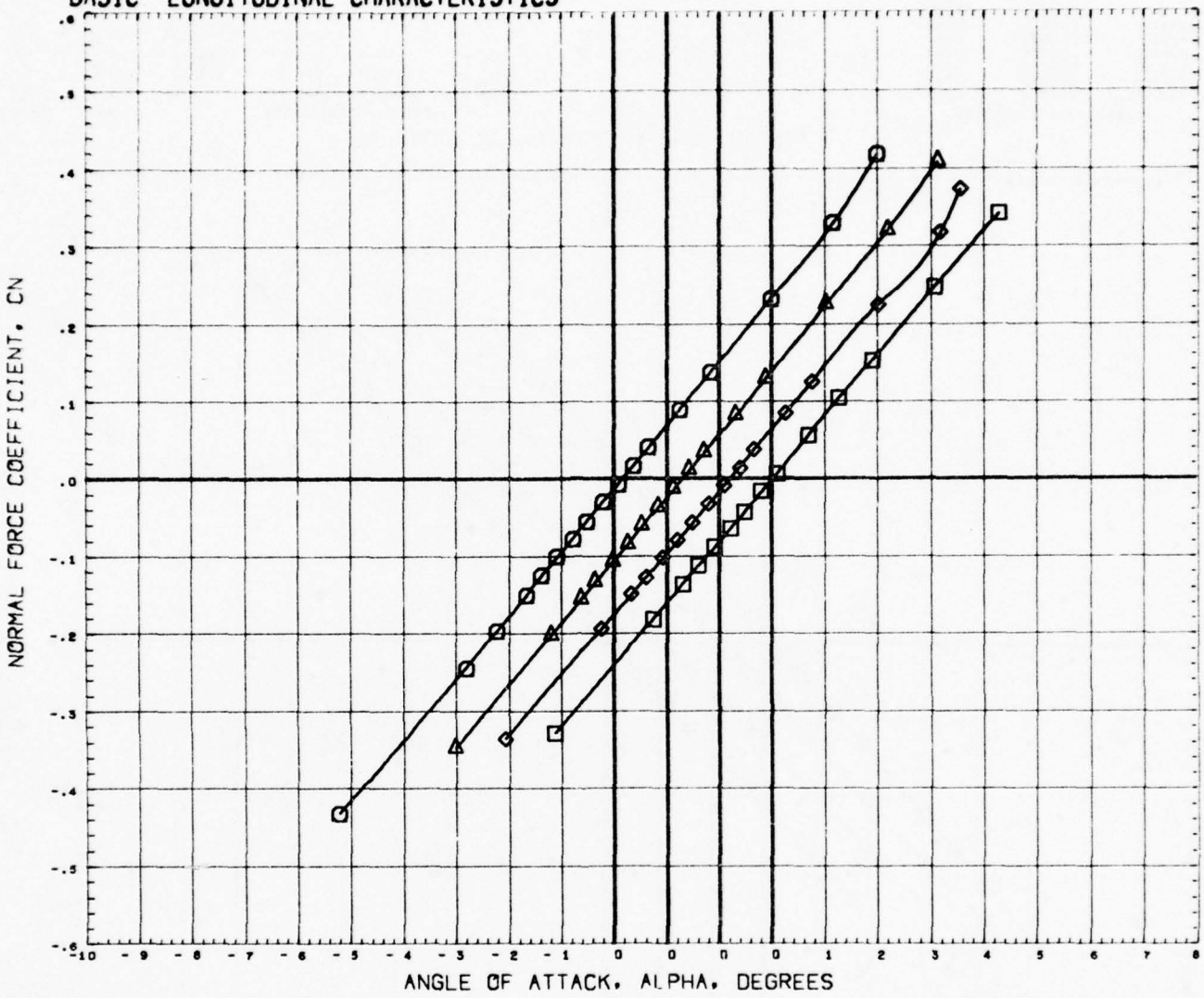
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.049	PHI	0.000	M-LGTH	1.500
△	1.098	LS-LGH	3.250	S-WDTH	0.200
◇	1.197	R-WDTH	1.000	C-LGTH	5.000
□	1.296	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

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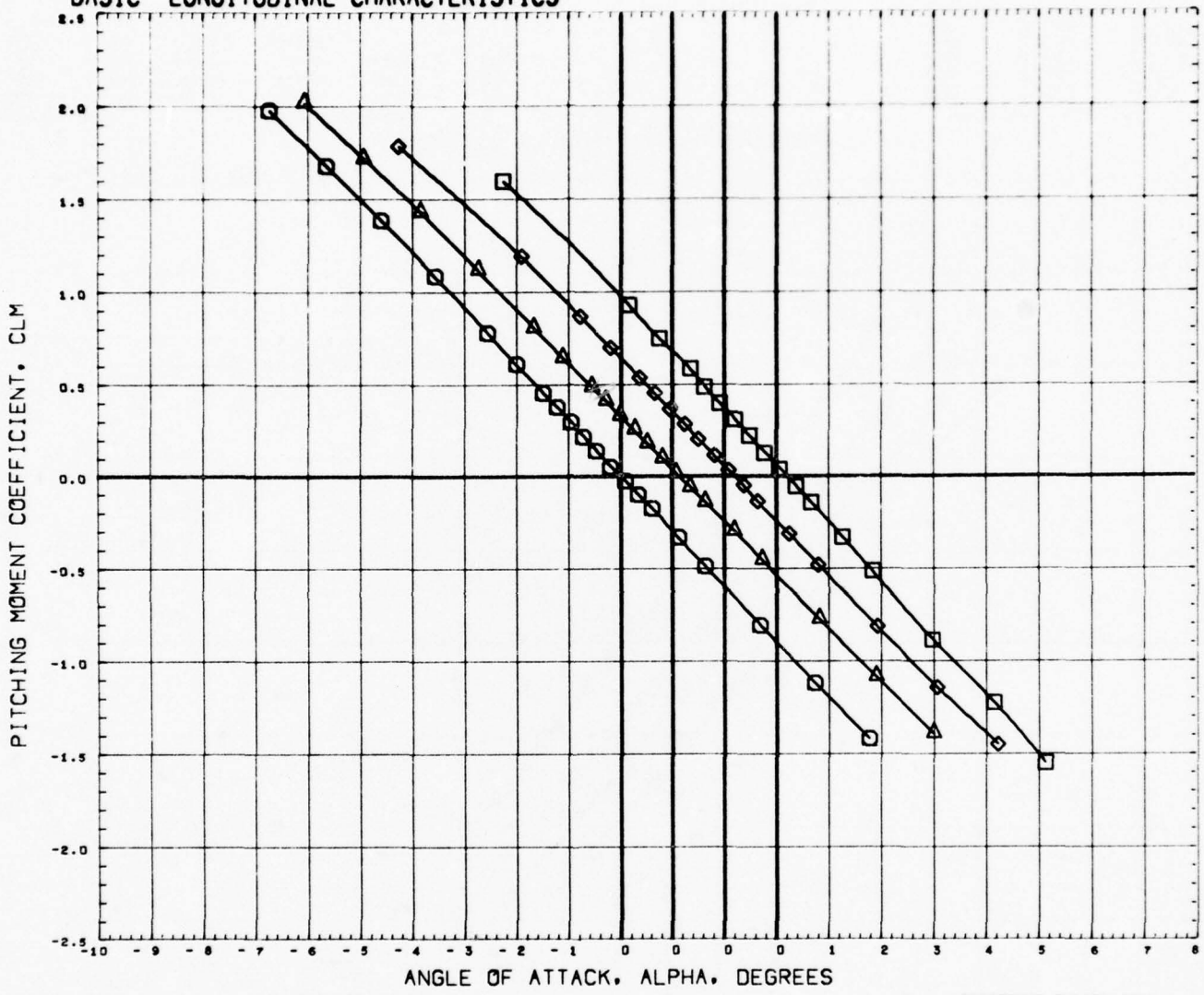
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.501	PHI	0.000	M-LGTH	1.500
△	0.799	LS-LGH	3.250	S-WDTH	0.200
◇	0.948	R-WDTH	1.000	C-LGTH	5.000
□	0.999	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

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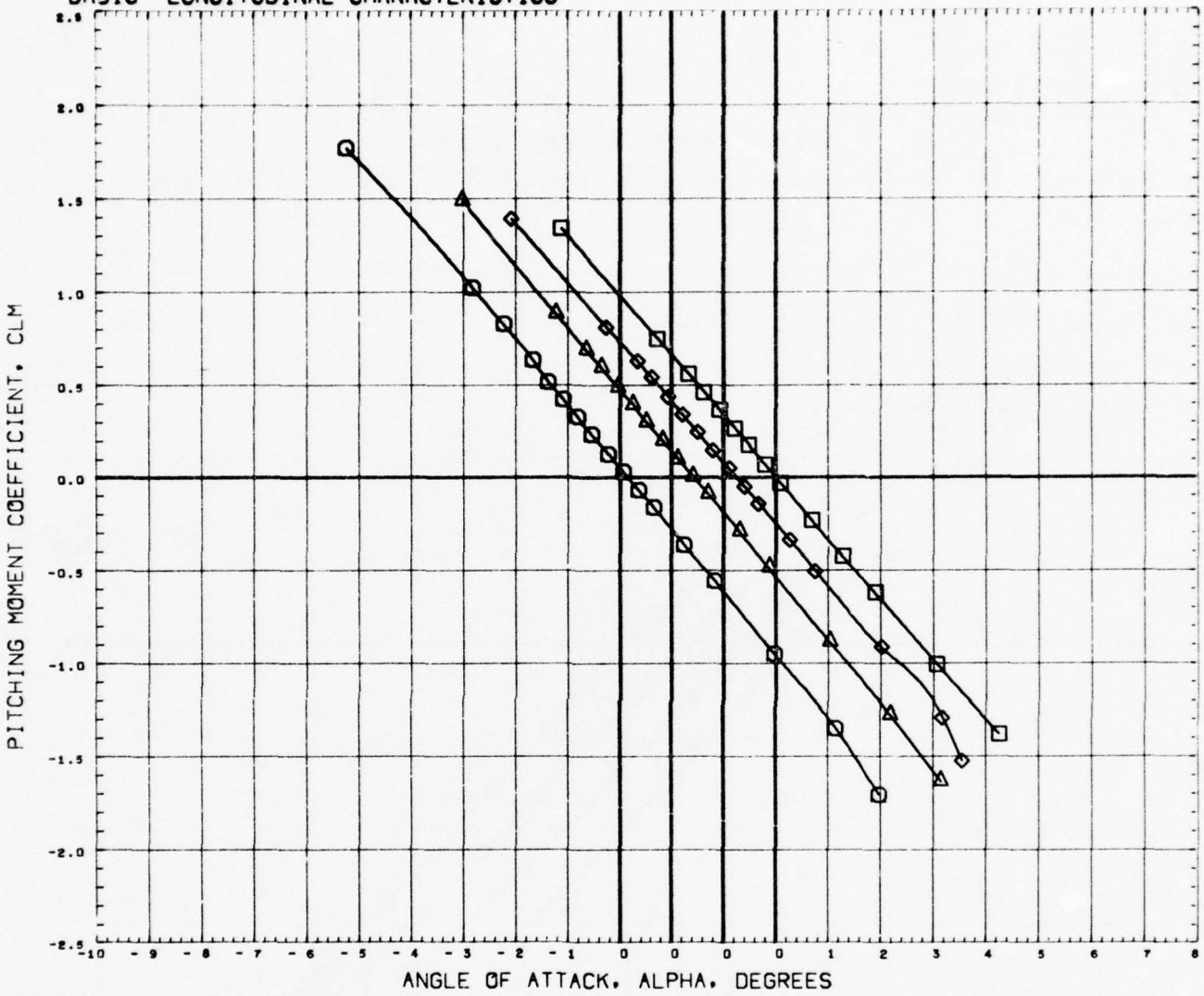
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	1.049	PHI	0.000	M-LGTH	1.500
△	1.098	LS-LGH	3.250	S-WDTH	0.200
◇	1.197	R-WDTH	1.000	C-LGTH	5.000
□	1.296	C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

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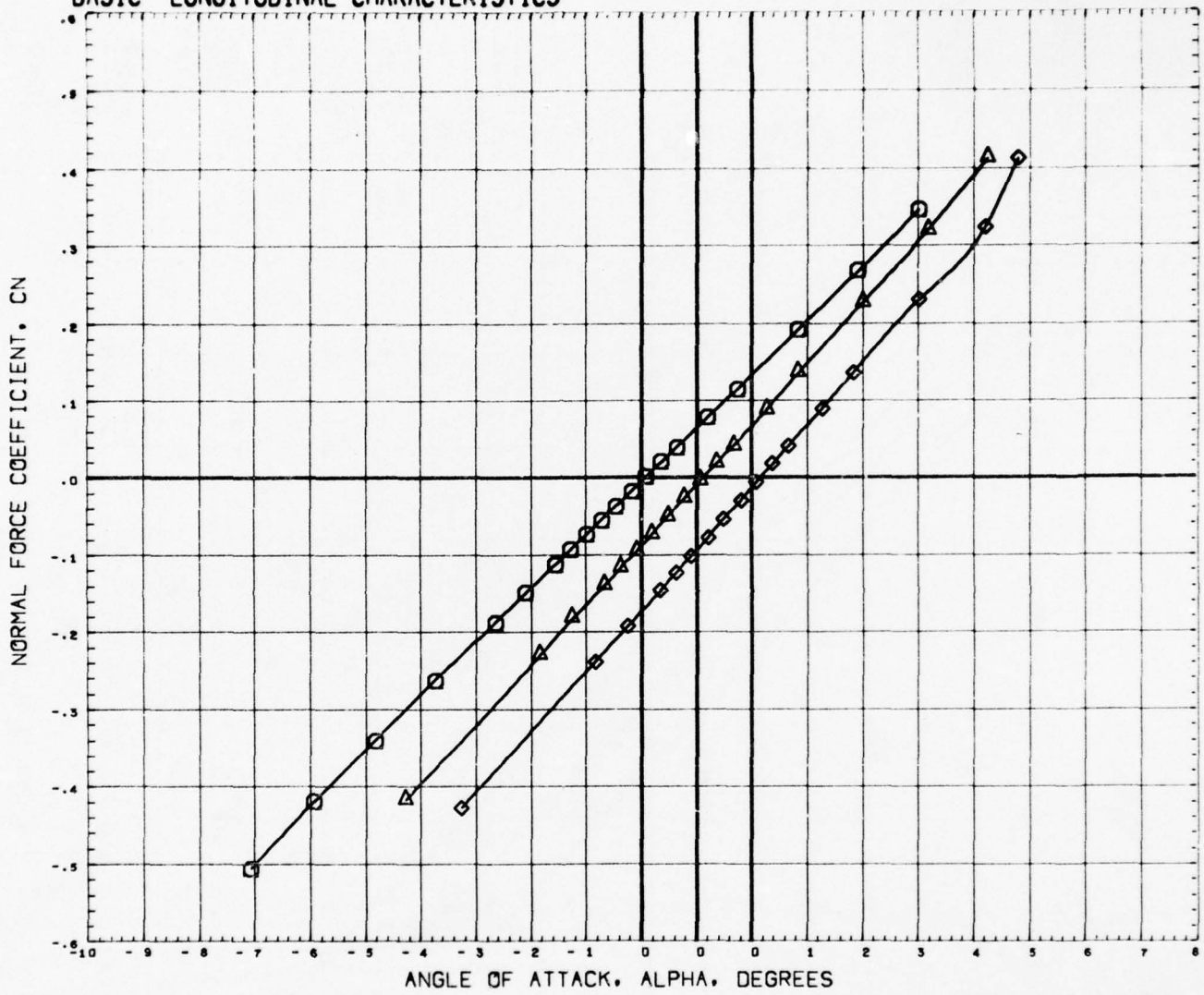
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.800	PHI	22.500	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.197	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
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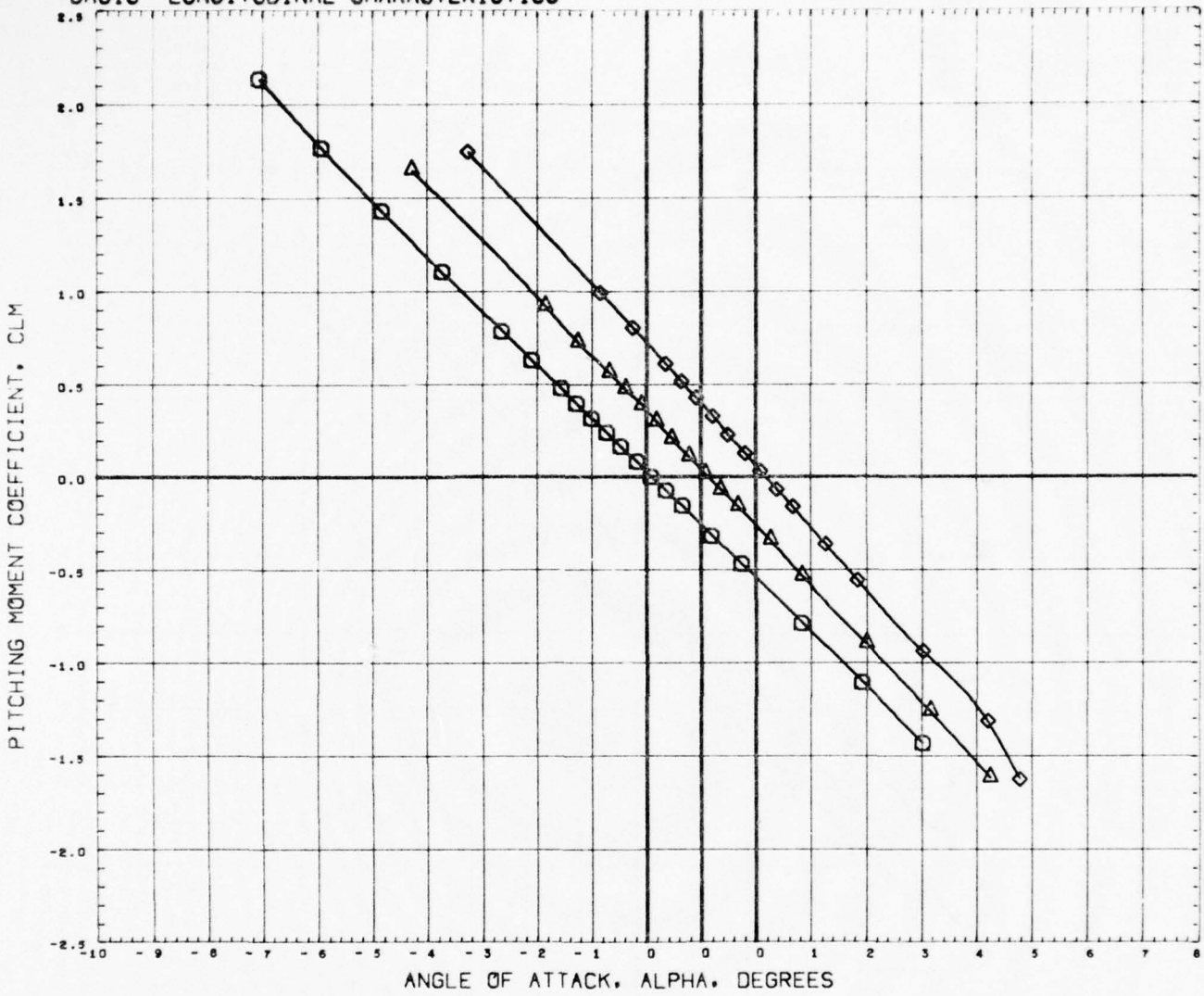
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.600	PHI	22.500	M-LGTH	1.500
△	1.001	LS-LGH	3.250	S-WDTH	0.200
◇	1.197	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
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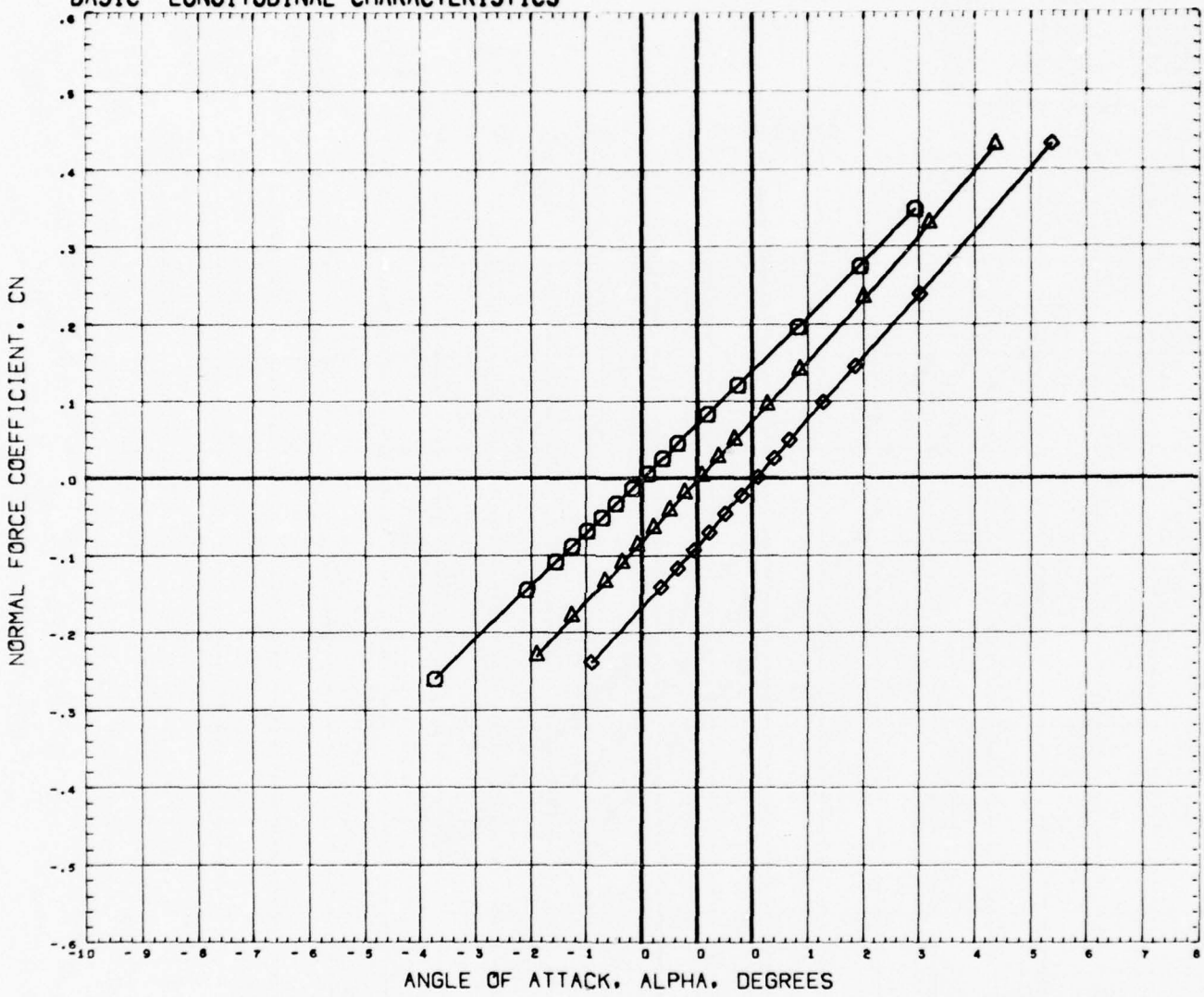
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH		PARAMETRIC VALUES		
○	0.800	PHI	45.000	M-LGTH	1.500
△	0.999	LS-LGH	3.250	S-WDTH	0.200
◇	1.198	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION		
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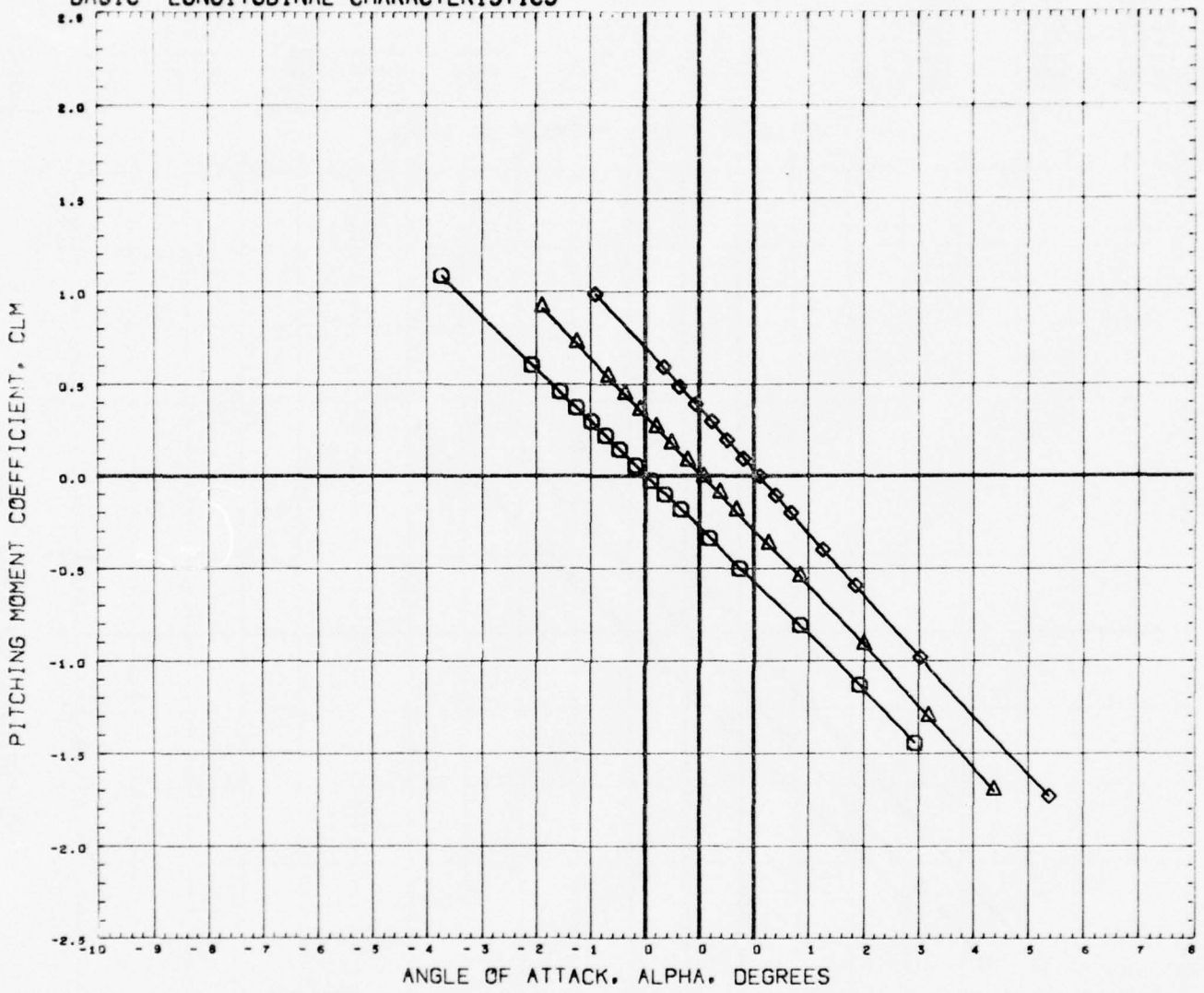
SCALE	0.0000	NONE

BASIC LONGITUDINAL CHARACTERISTICS



SYMBOL	MACH	PARAMETRIC VALUES			
○	0.800	PHI	45.000	M-LGTH	1.500
△	0.999	LS-LGH	3.250	S-WDTH	0.200
◇	1.198	R-WDTH	1.000	C-LGTH	5.000
		C-DIA	0.400		

REFERENCE FILE

REFERENCE INFORMATION		
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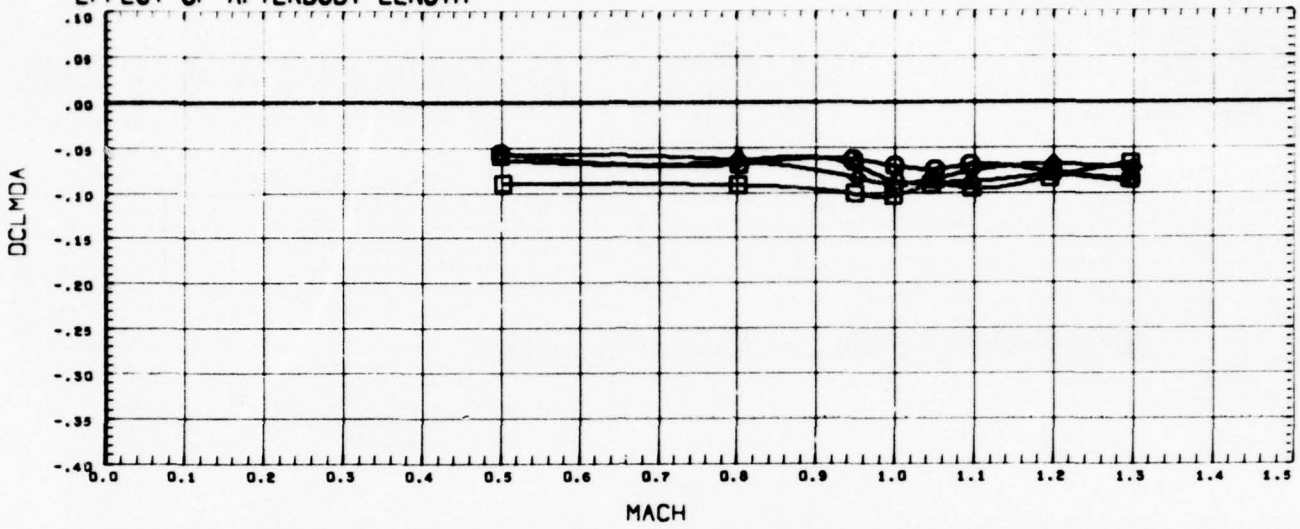
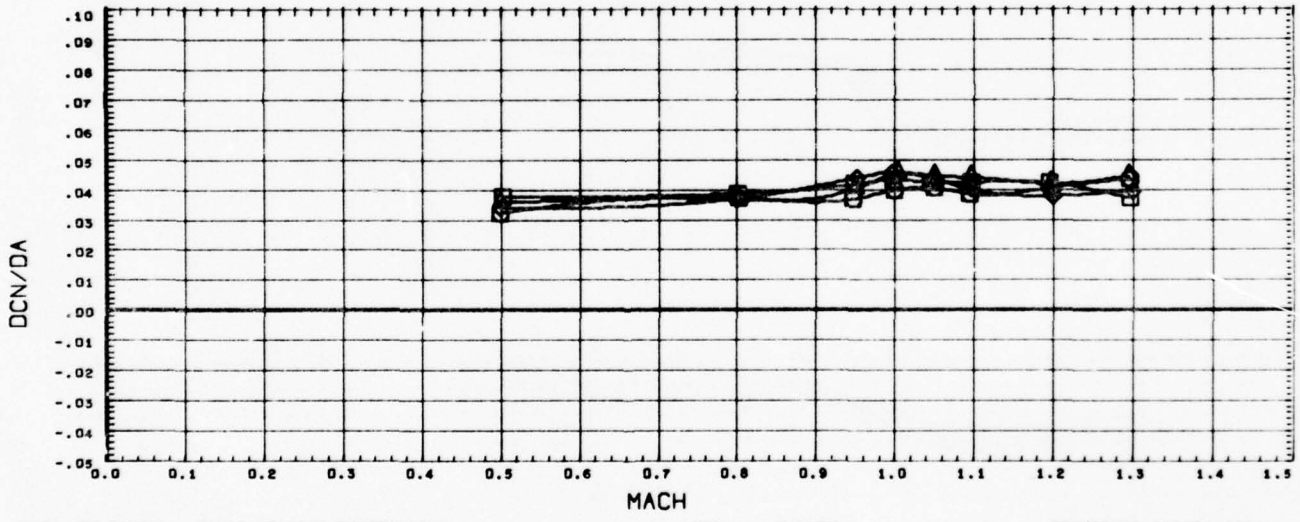
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH





DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH
(RTAM01)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1	0.000	2.250
(RTAM02)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2	0.000	1.500
(RTAM03)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M3	0.000	0.750
(RTAM04)	□	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M4	0.000	5.750

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
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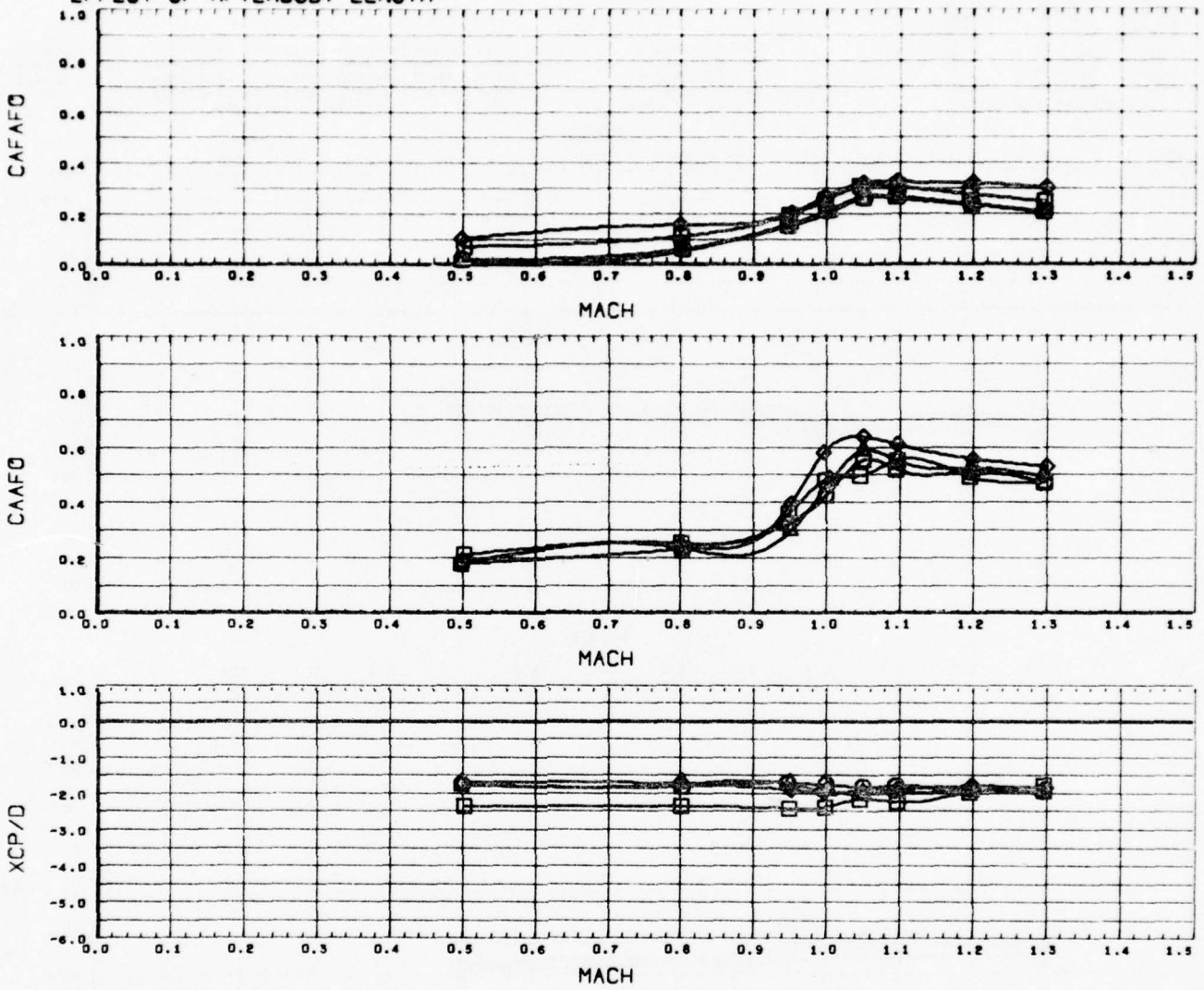
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH
(BTAM01)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1	0.000	2.250
(BTAM02)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2	0.000	1.500
(BTAM03)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M3	0.000	0.750
(BTAM04)	□	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M4	0.000	5.750

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
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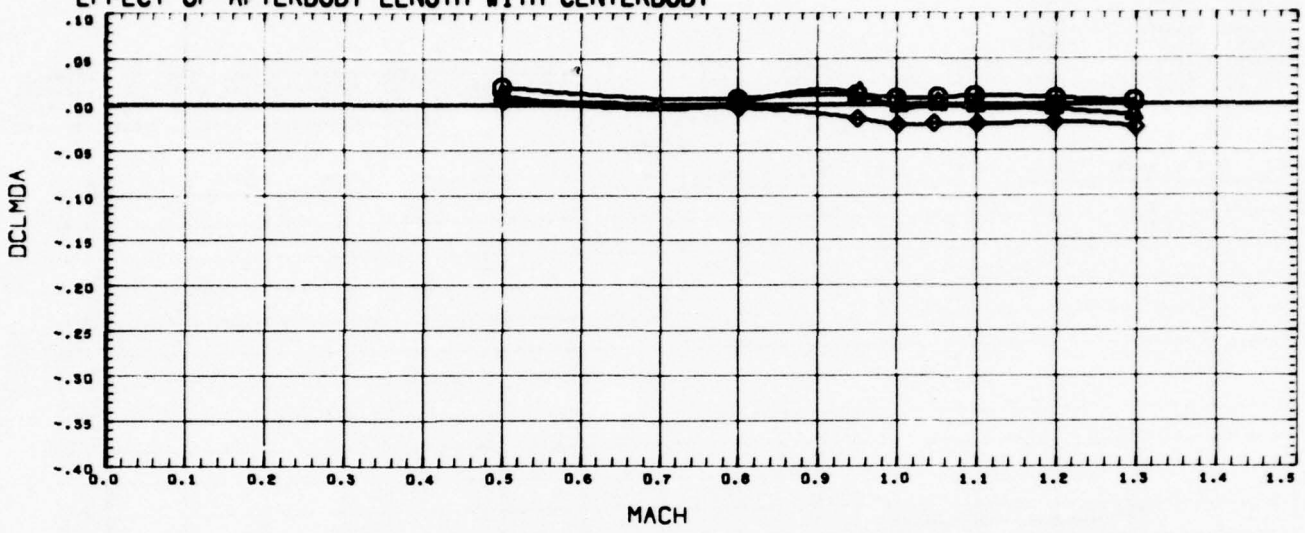
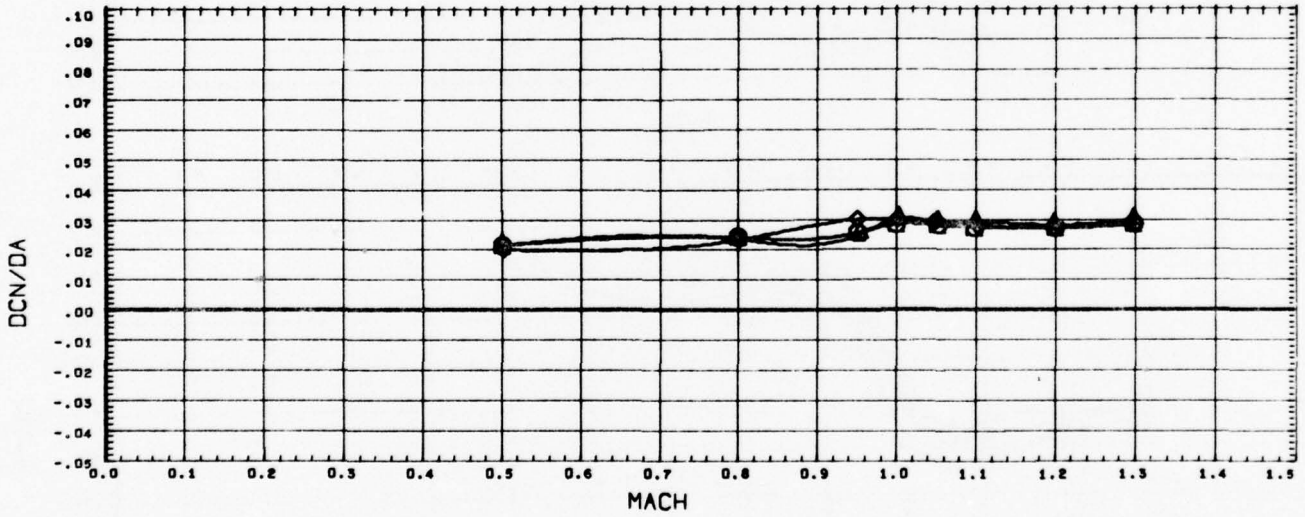
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH WITH CENTERBODY

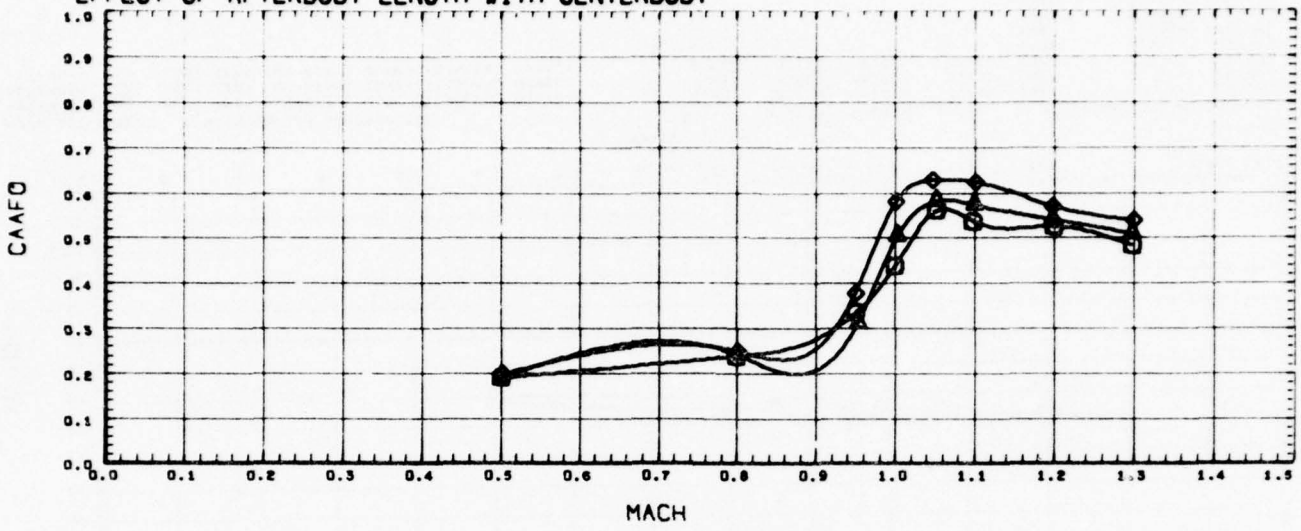


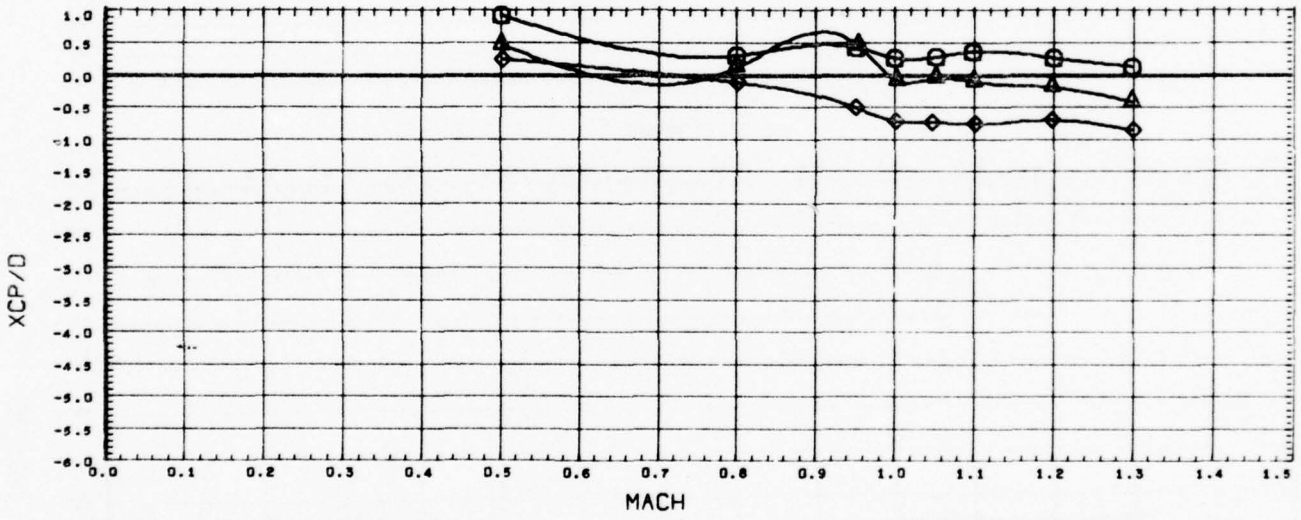


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(RTAM05)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C1	0.000	2.250	5.000	0.400
(CTAM06)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	0.000	1.500	5.000	0.400
(RTAM07)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M3C1	0.000	0.750	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH WITH CENTERBODY





DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(BTAM05)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C1	0.000	2.250	5.000	0.400
(BTAM06)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	0.000	1.500	5.000	0.400
(BTAM07)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M3C1	0.000	0.750	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
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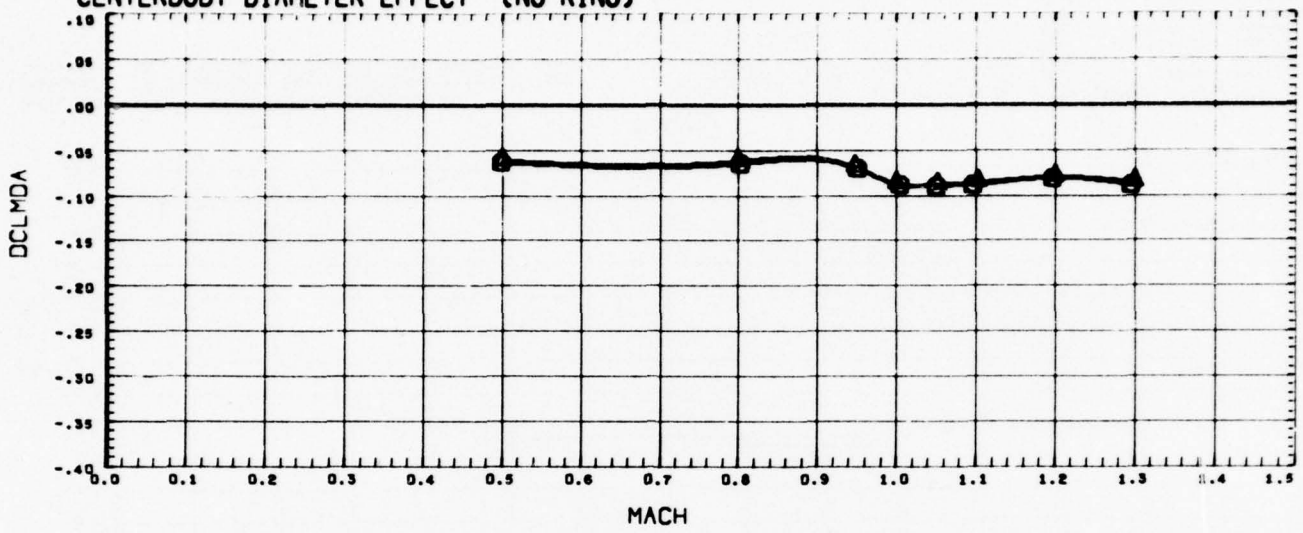
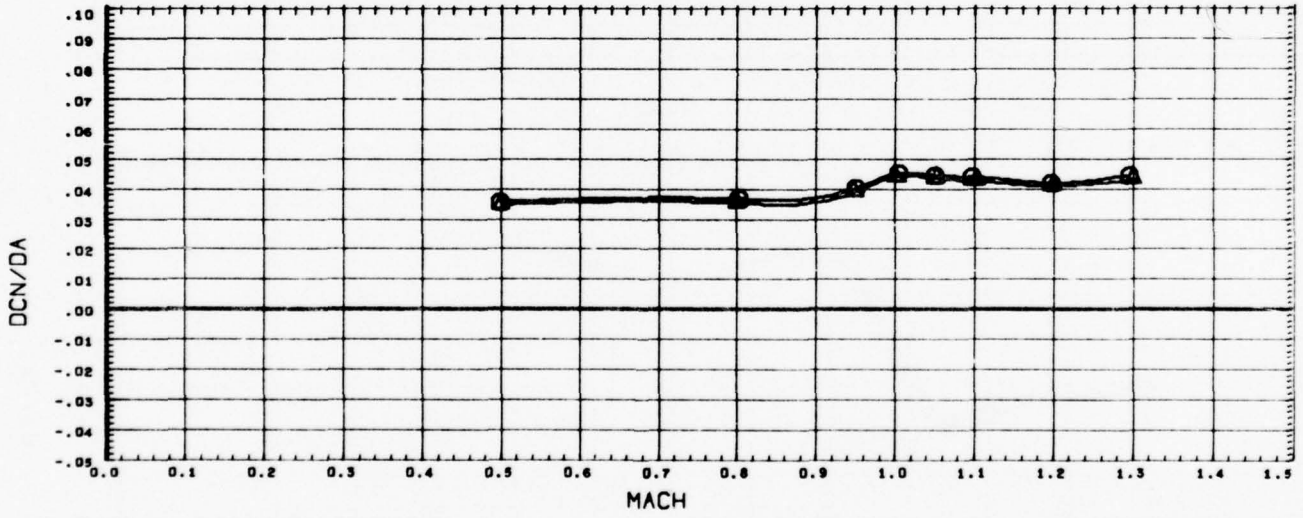
CENTERBODY DIAMETER EFFECT (NO RING)

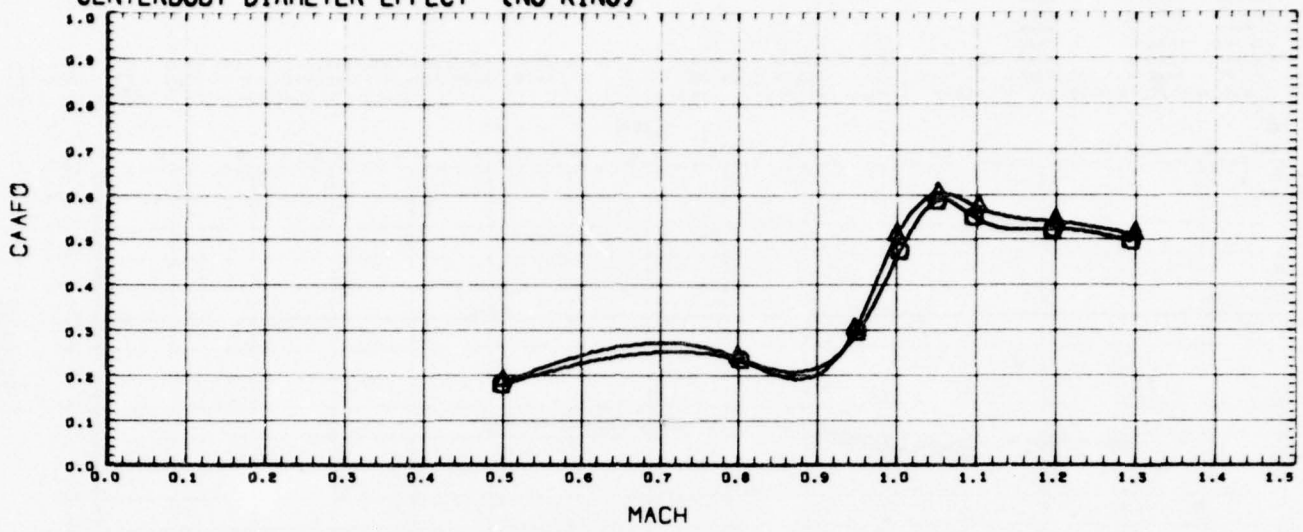


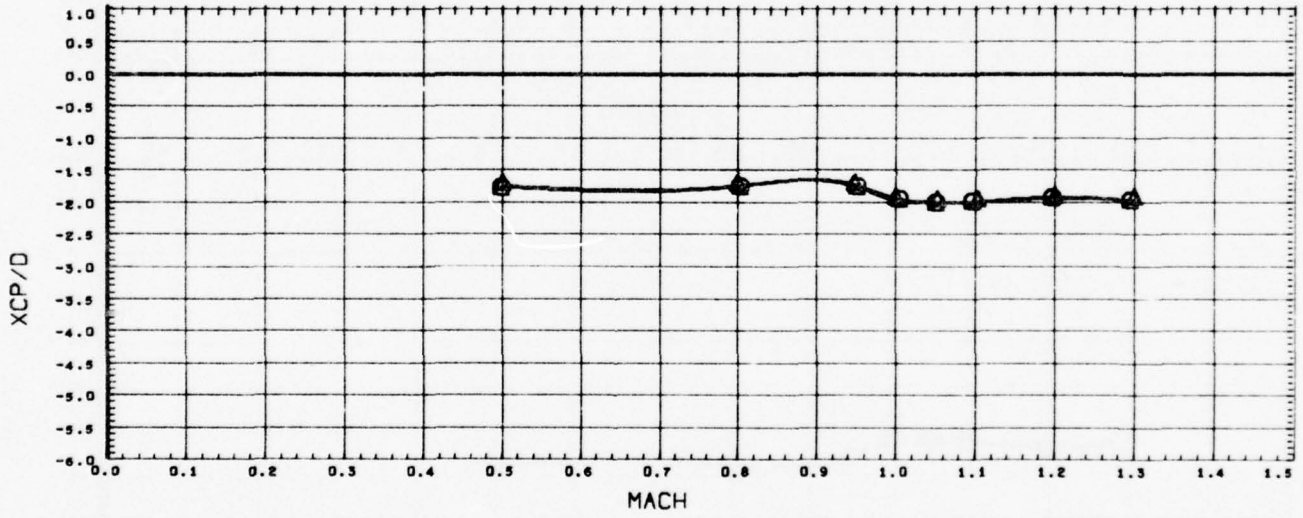


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(RTAM02)		AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2	0.000	1.500		
(RTAM12)		AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C5	0.000	1.500	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

CENTERBODY DIAMETER EFFECT (NO RING)

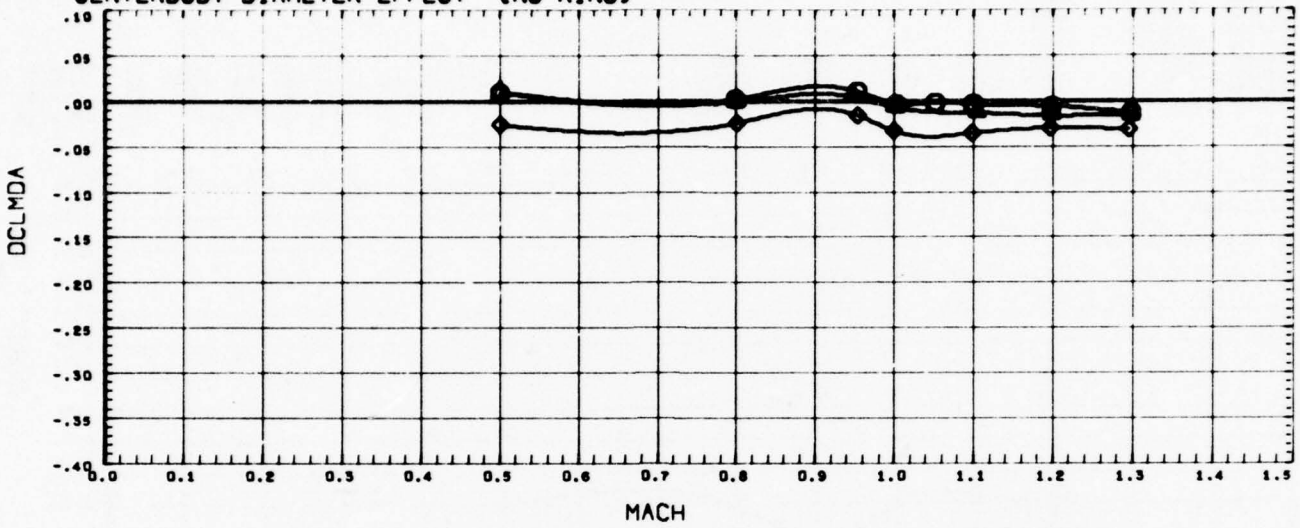


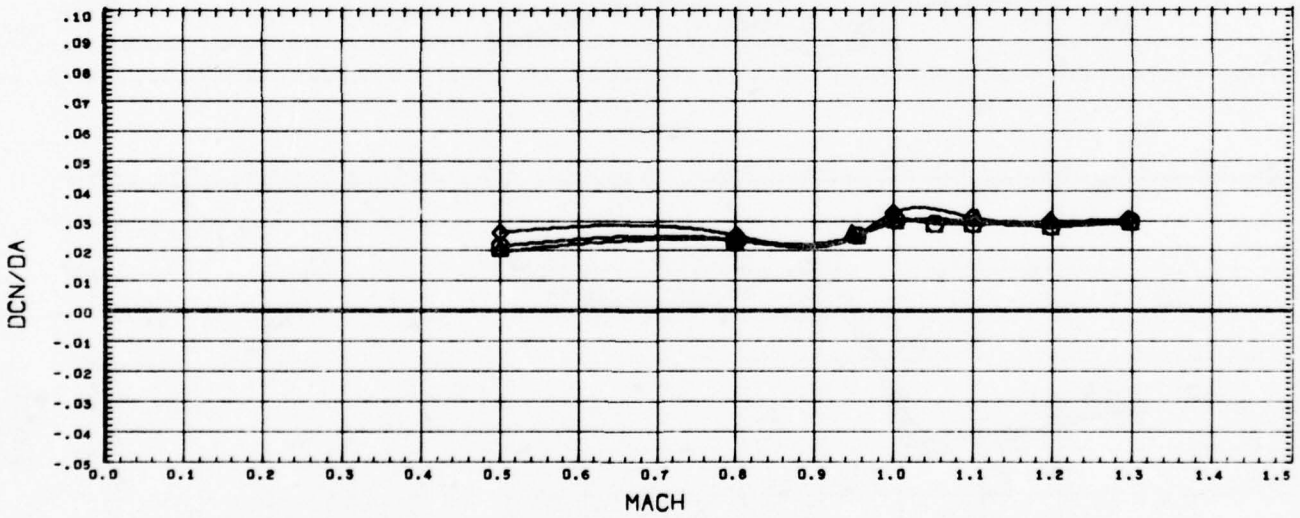


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PHI	N-LGTH	C-LGTH	C-DIA
(BTAM02)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2	0.000	1.500		
(BTAM12)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C5	0.000	1.500	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

CENTERBODY DIAMETER EFFECT (NO RING)

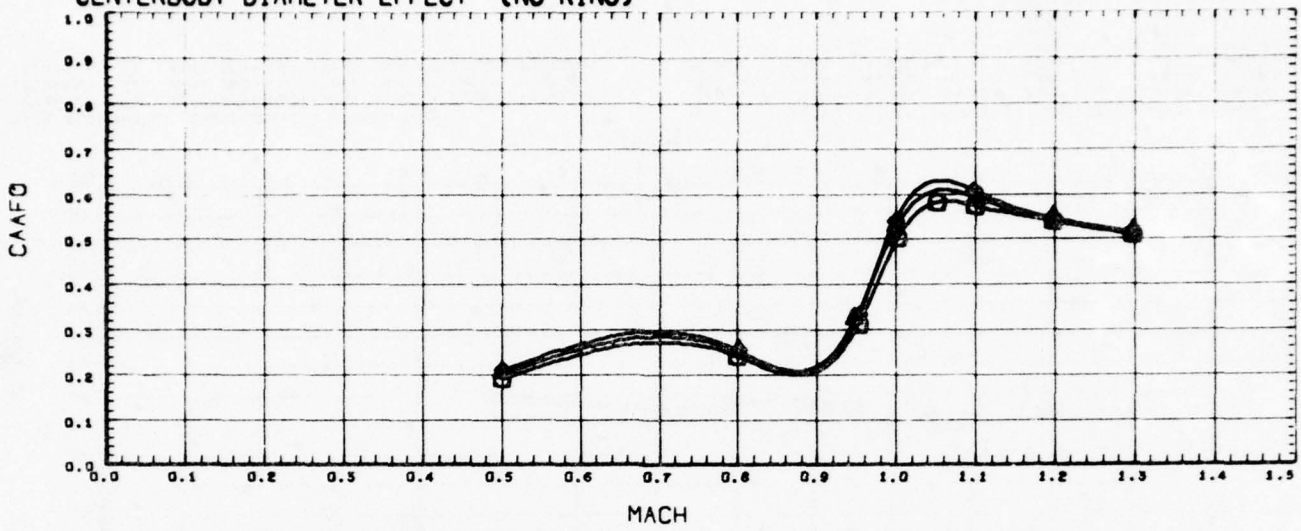


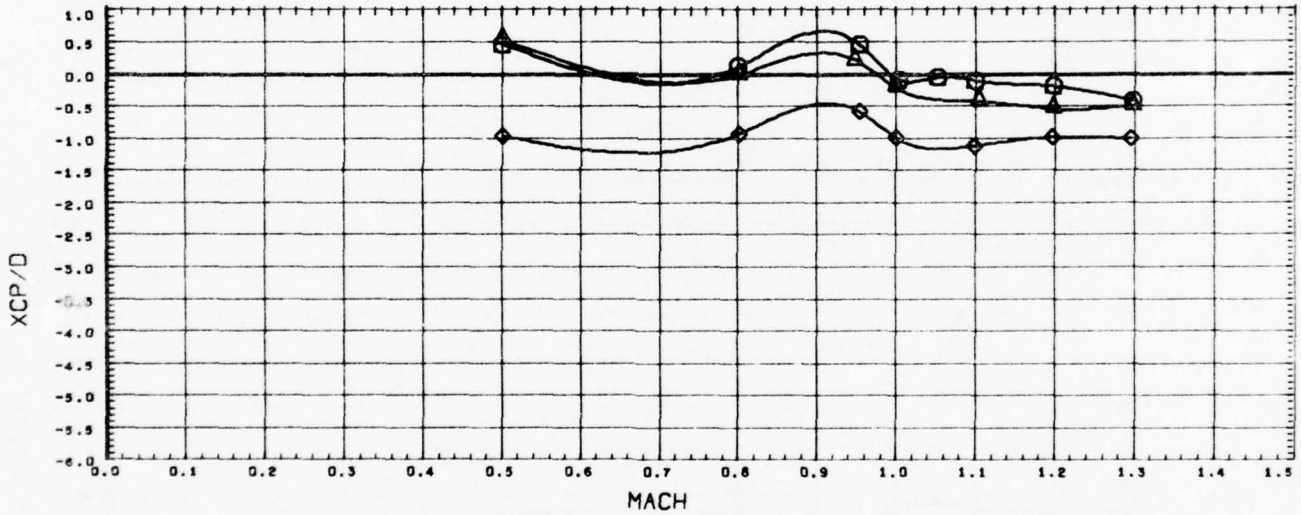


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(CTAM06)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	0.000	1.500	5.000	0.400
(RTAM10)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C2	0.000	1.500	5.000	0.500
(RTAM11)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C3	0.000	1.500	5.000	0.670

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

CENTERBODY DIAMETER EFFECT (NØ RING)

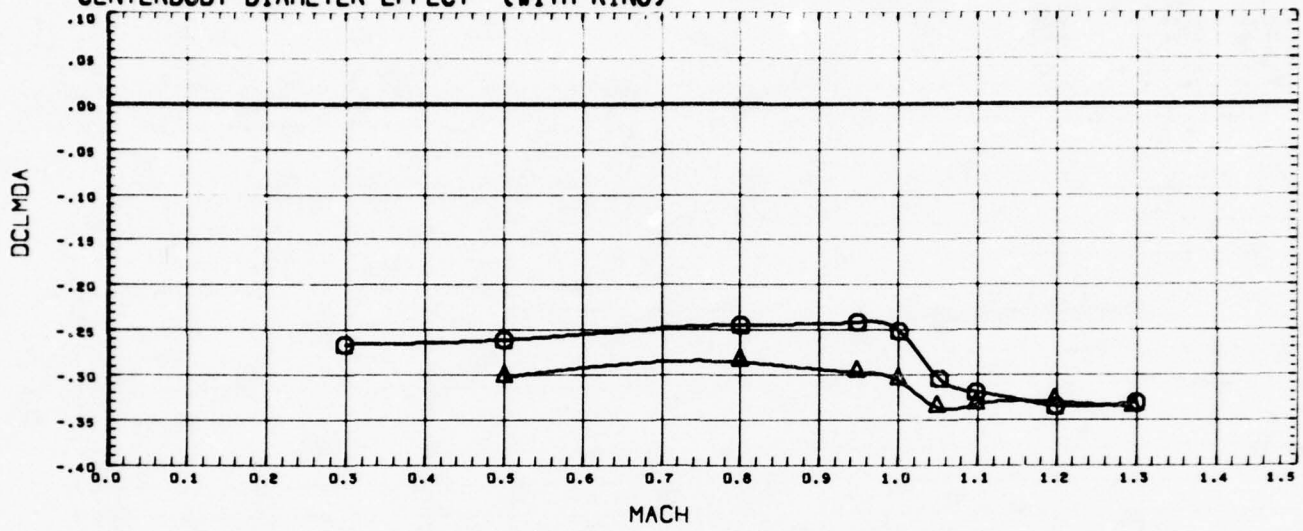


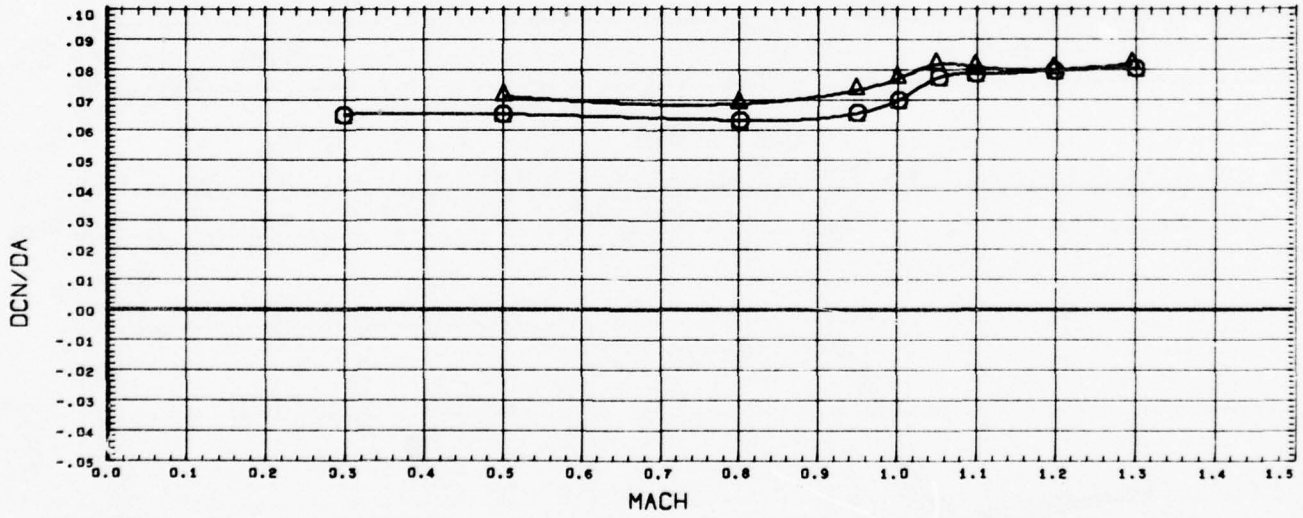


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(BTAMØ6)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	0.000	1.500	5.000	0.400
(BTAM10)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C2	0.000	1.500	5.000	0.500
(BTAM11)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C3	0.000	1.500	5.000	0.670

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

CENTERBODY DIAMETER EFFECT (WITH RING)

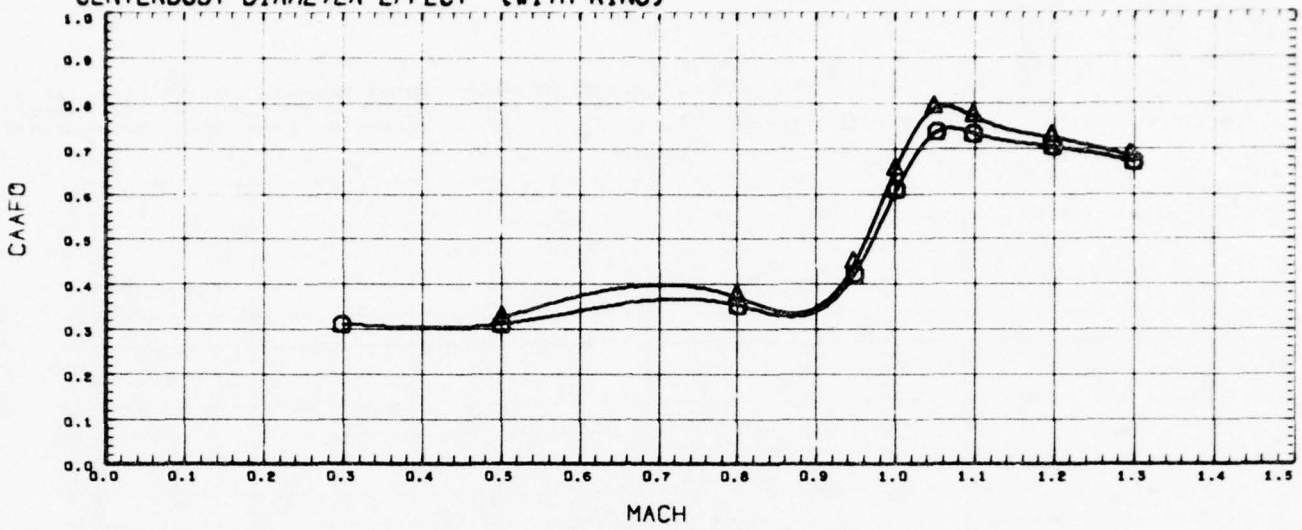


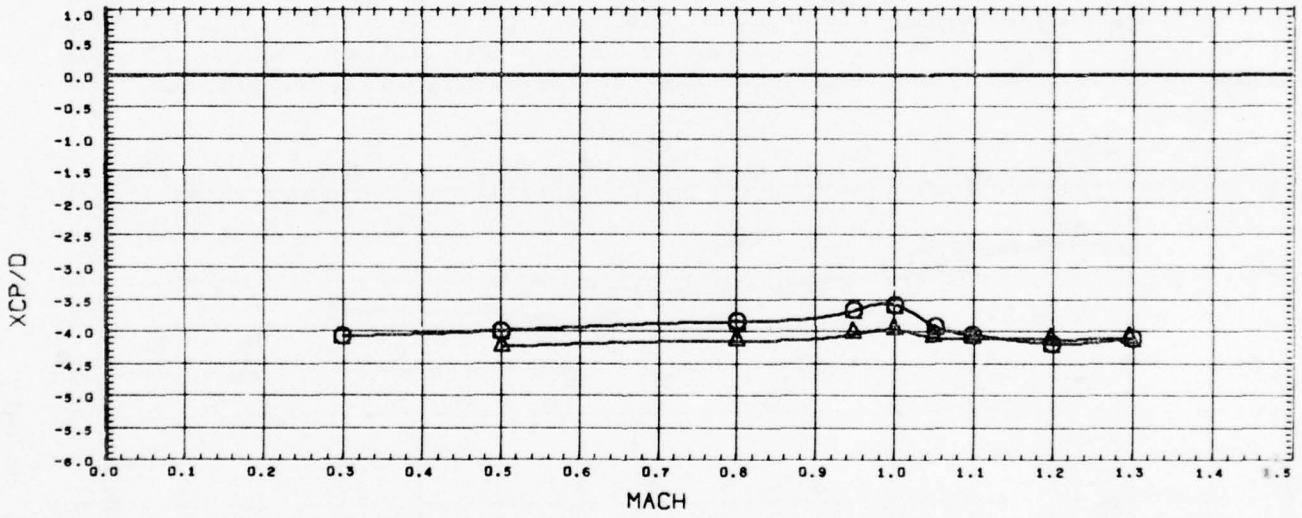


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(CTAR02)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500		
(RTAR25)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	0.000	1.500	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

CENTERBODY DIAMETER EFFECT (WITH RING)

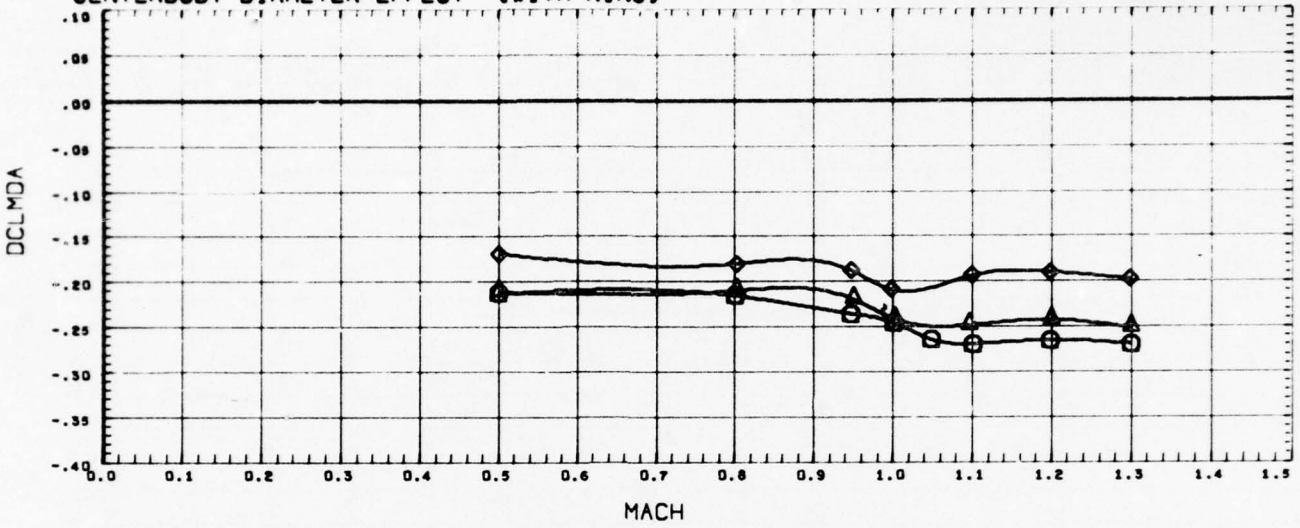


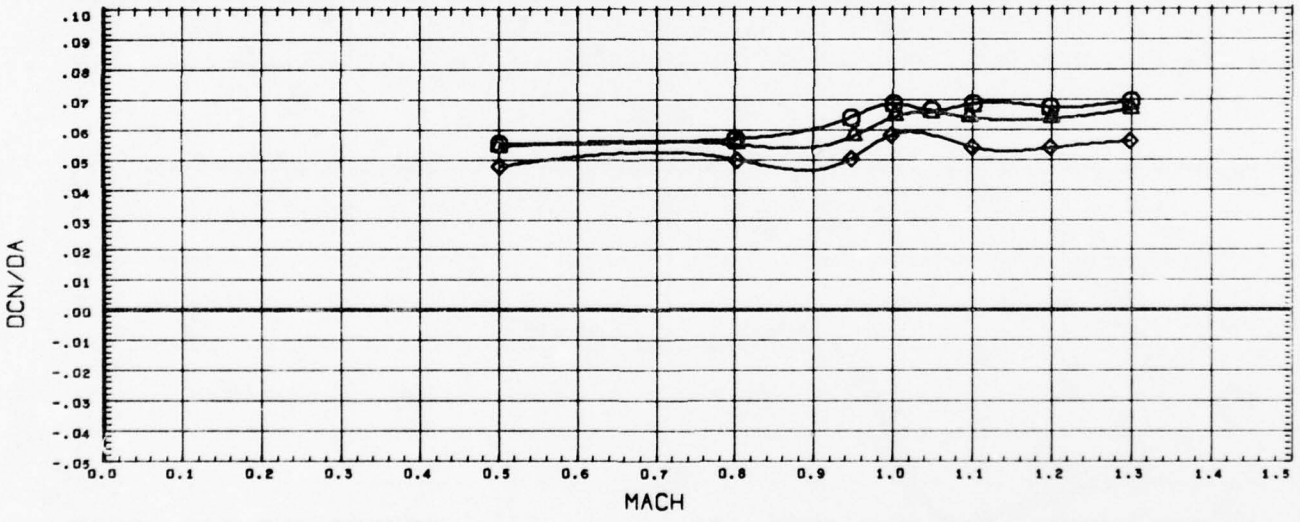


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(BTAR02)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500		
(BTAR25)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	0.000	1.500	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

CENTERBODY DIAMETER EFFECT (WITH RING)

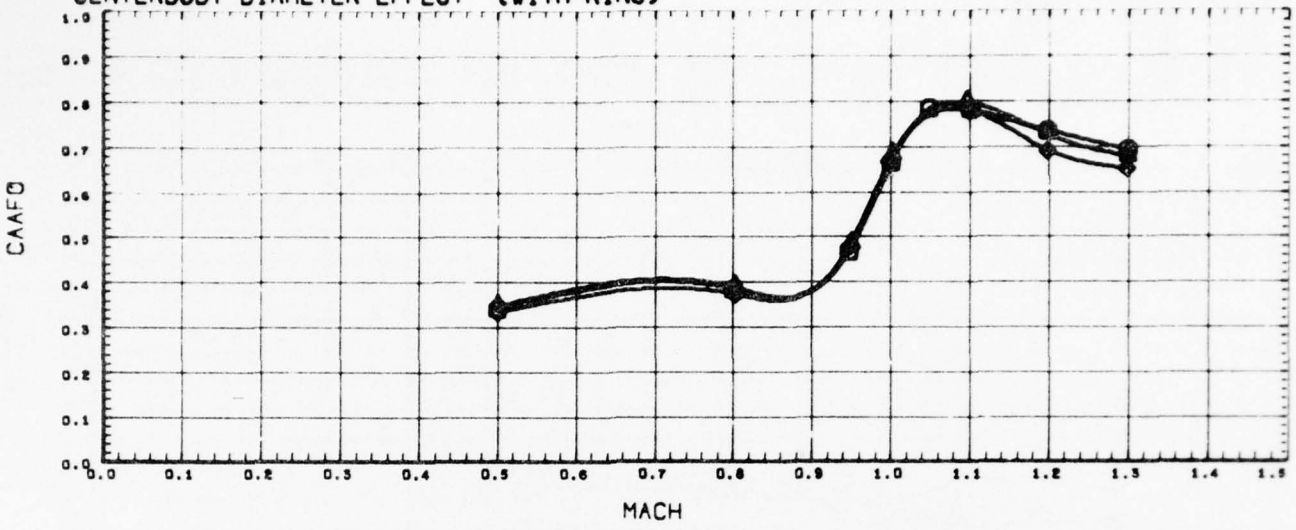


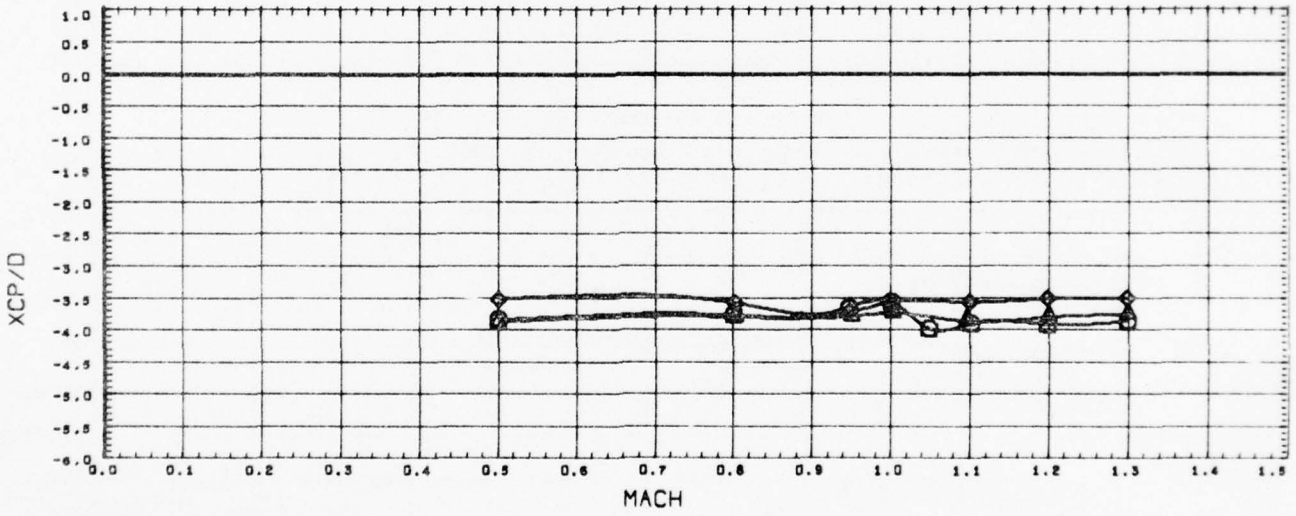


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(RTAR09)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C1	0.000	1.500	5.000	0.400
(RTAR18)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	0.000	1.500	5.000	0.500
(RTAR20)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C3	0.000	1.500	5.000	0.670

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

CENTERBODY DIAMETER EFFECT (WITH RING)

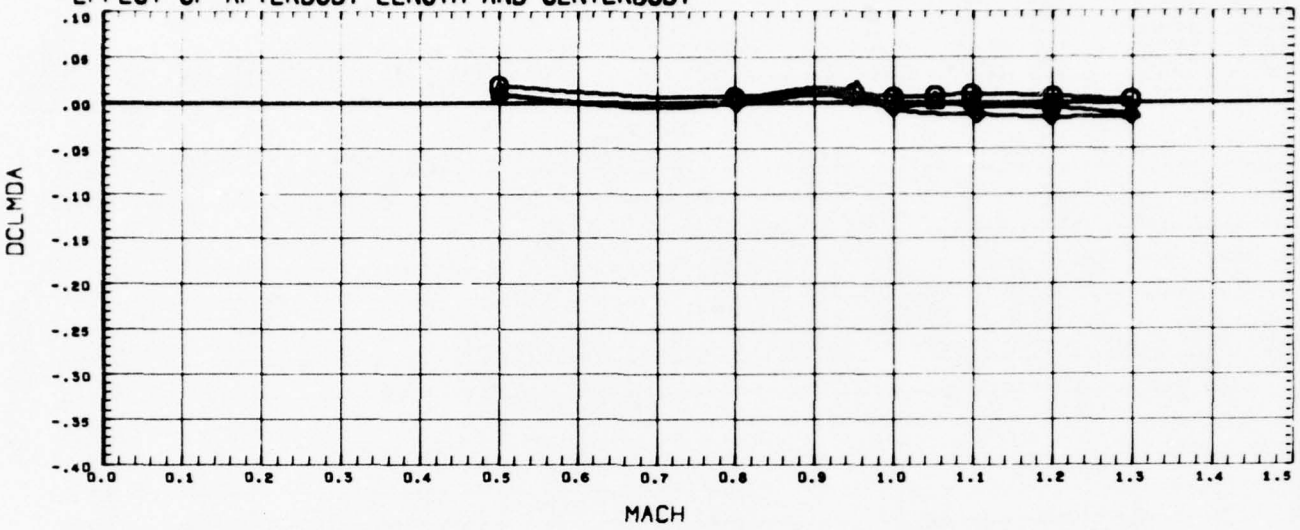


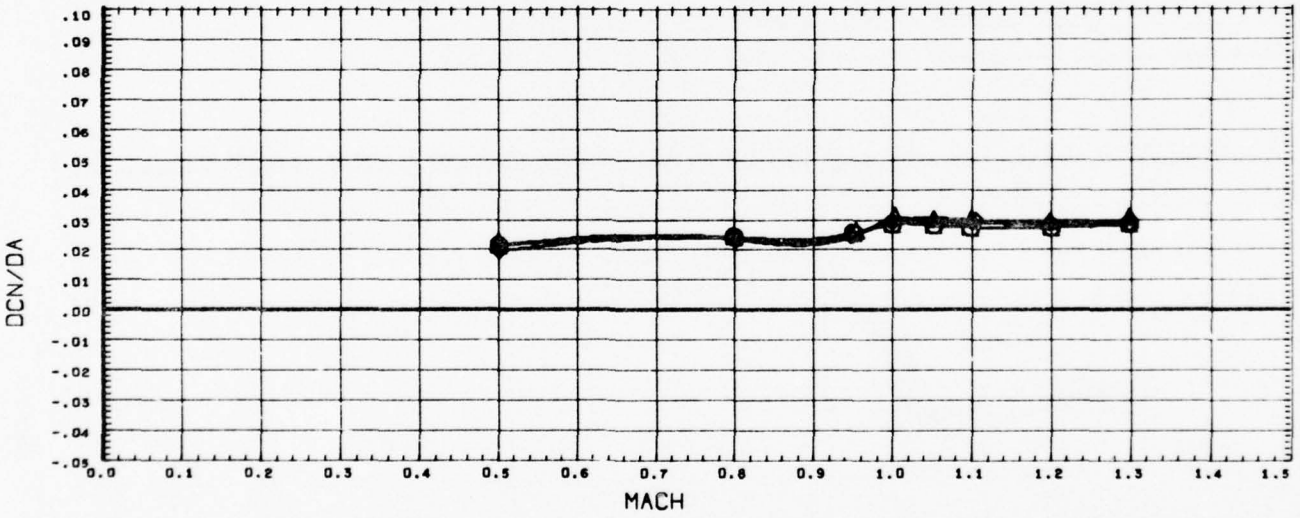


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(BTAR09)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C1	0.000	1.500	5.000	0.400
(BTAR18)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	0.000	1.500	5.000	0.500
(BTAR20)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C3	0.000	1.500	5.000	0.670

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH AND CENTERBODY

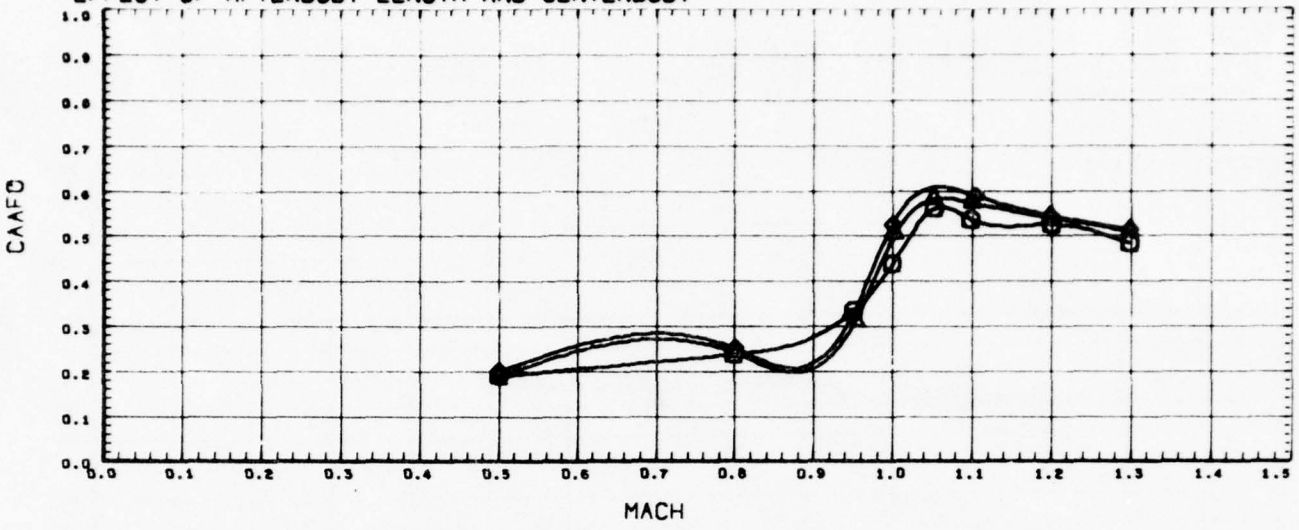


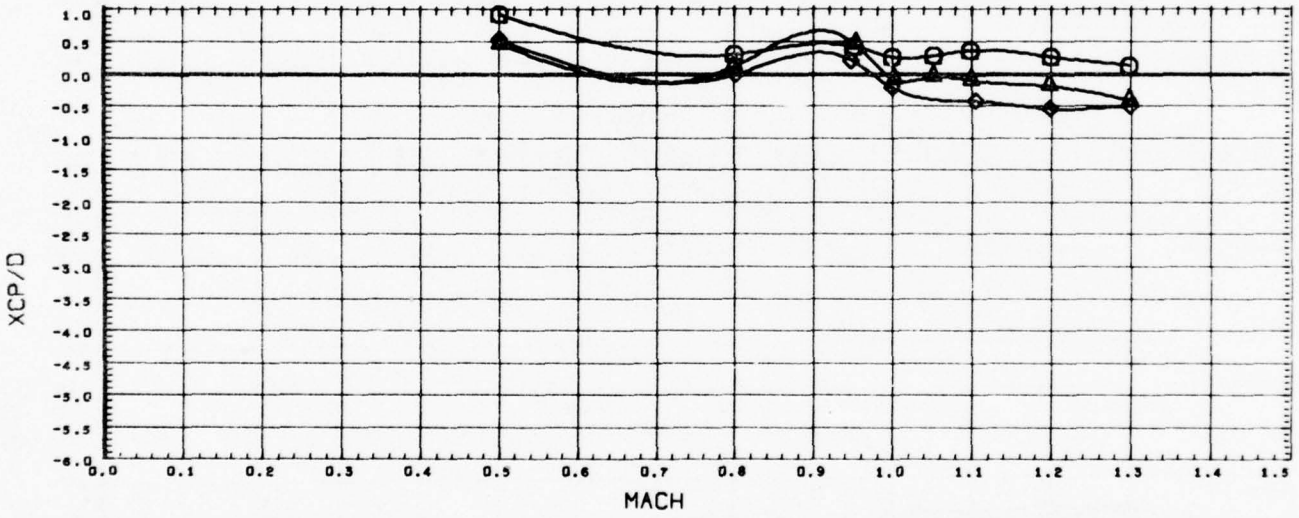


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(RTAM05)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C1	0.000	2.250	5.000	0.400
(CTAM06)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	0.000	1.500	5.000	0.400
(RTAM10)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C2	0.000	1.500	5.000	0.500

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH AND CENTERBODY

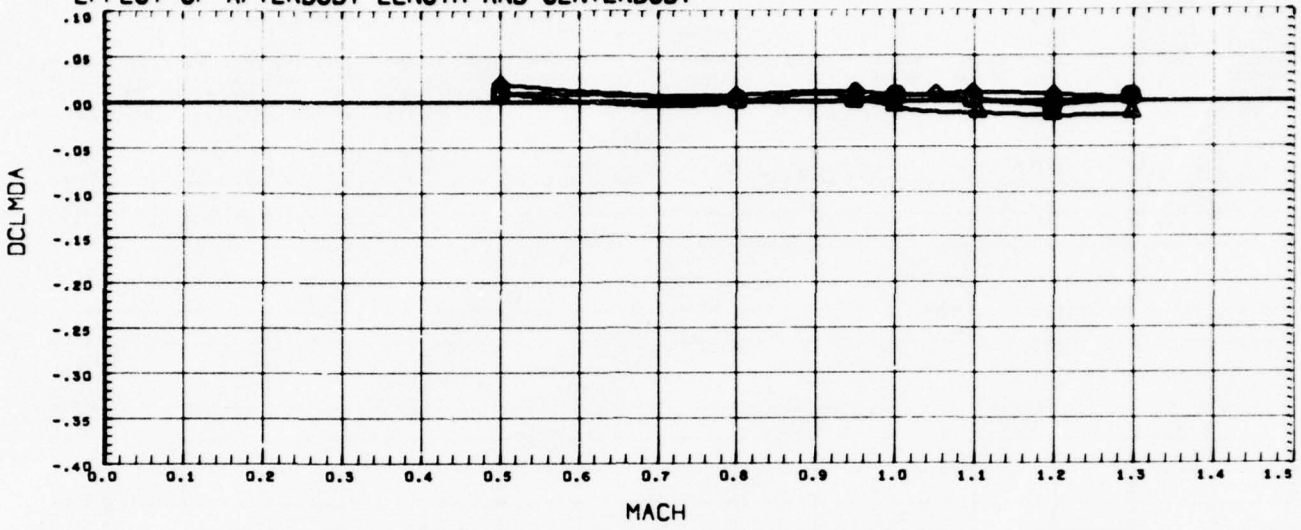


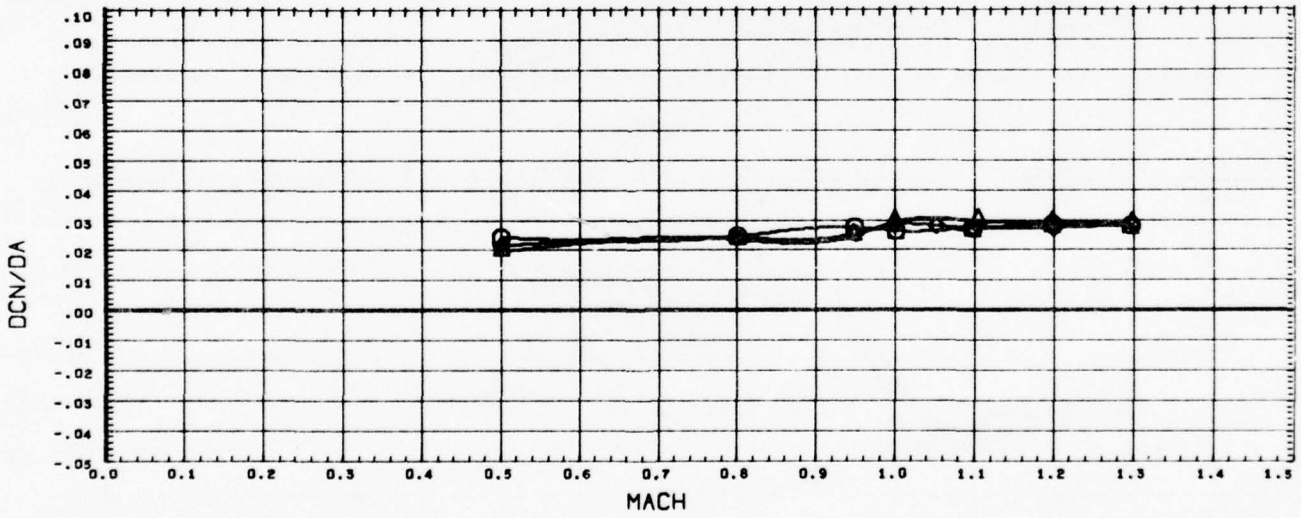


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(BTAM05)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C1	0.000	2.250	5.000	0.400
(BTAM06)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	0.000	1.500	5.000	0.400
(BTAM10)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C2	0.000	1.500	5.000	0.500

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH AND CENTERBODY

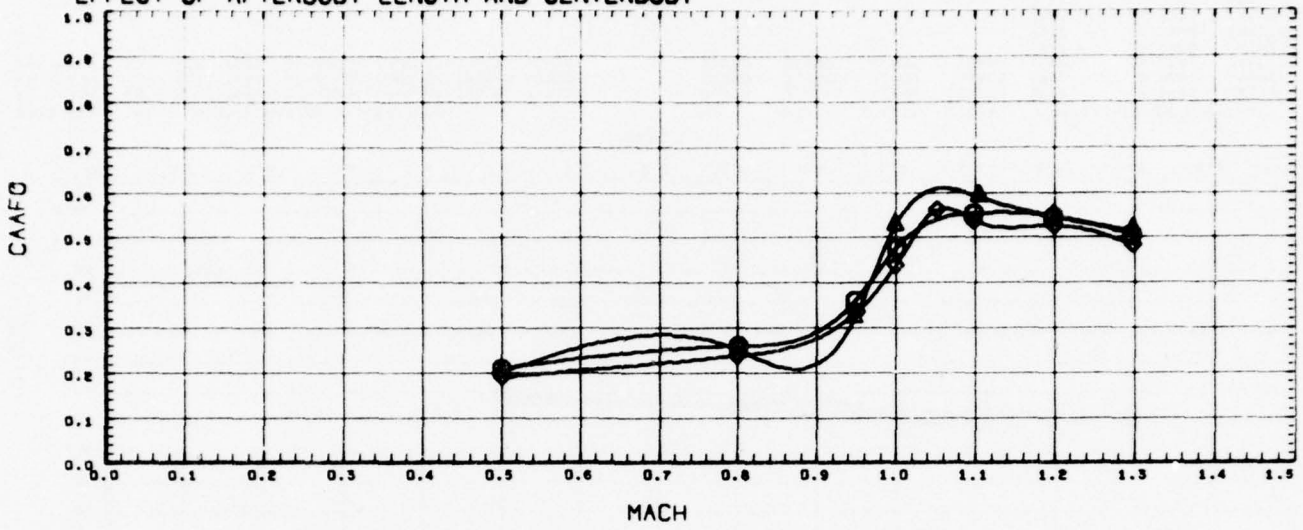


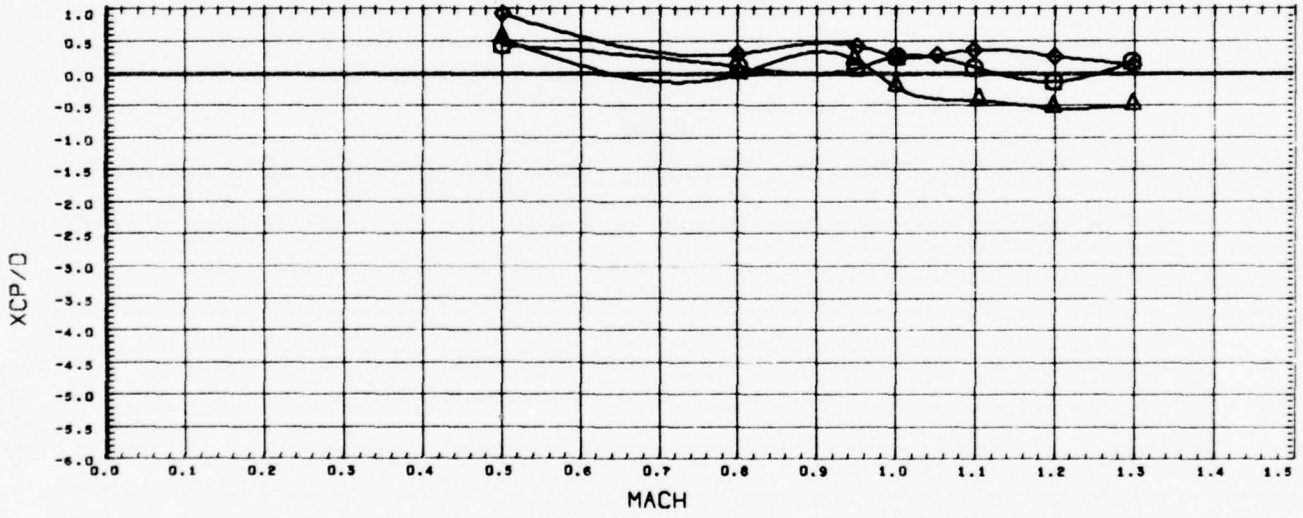


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(RTAM13)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C4	0.000	2.250	6.500	0.500
(RTAM10)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C2	0.000	1.500	5.000	0.500
(RTAM05)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C1	0.000	2.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF AFTERBODY LENGTH AND CENTERBODY

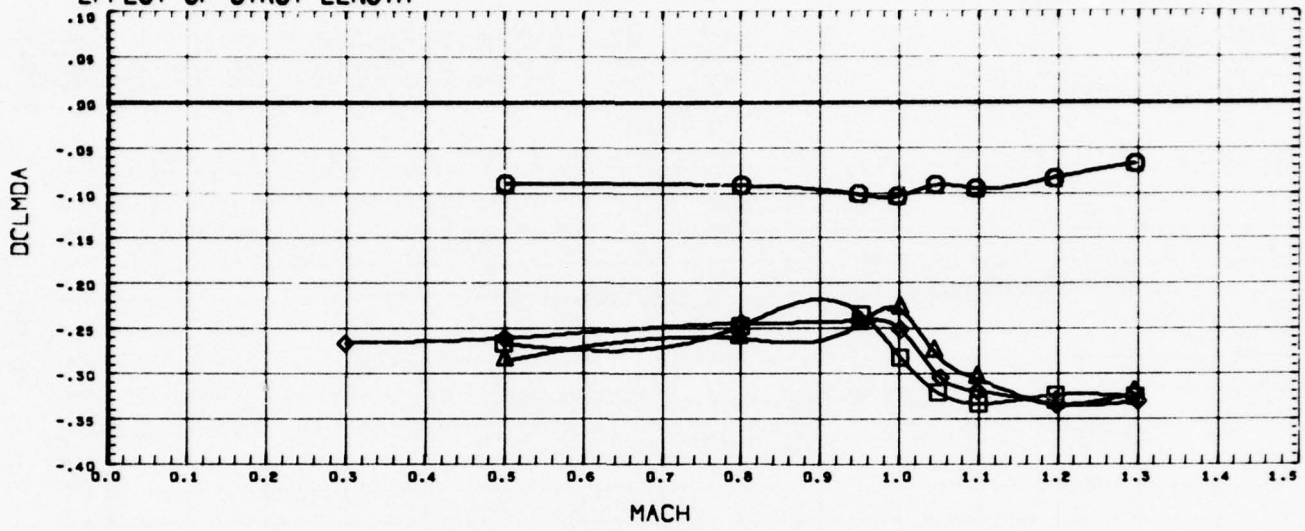


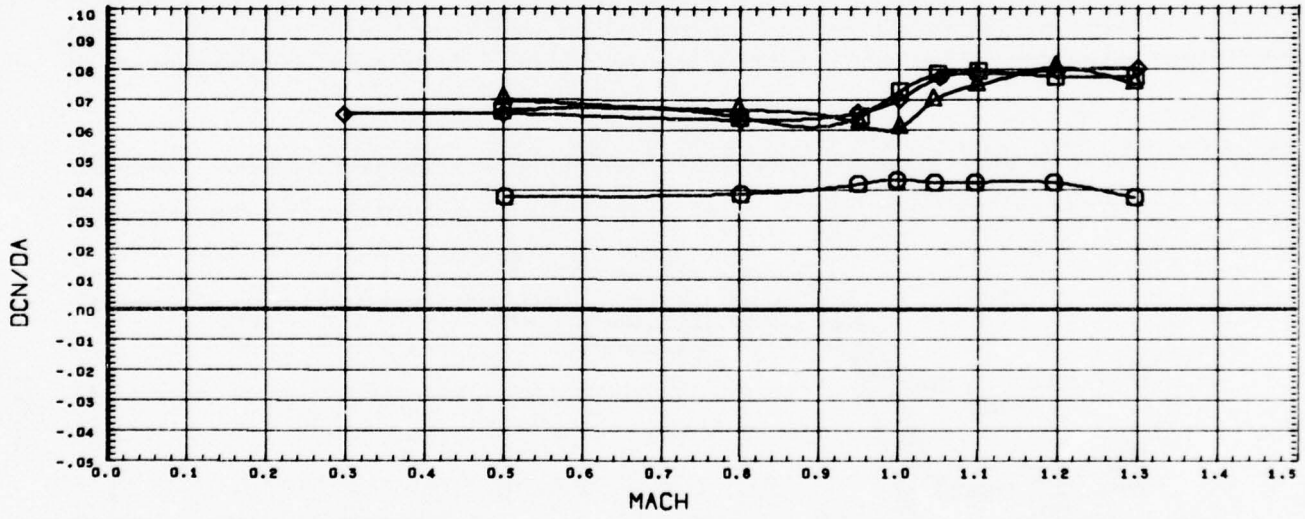


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(BTAM13)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C4	0.000	2.250	6.500	0.500
(BTAM10)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C2	0.000	1.500	5.000	0.500
(BTAM05)	◇	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M1C1	0.000	2.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH

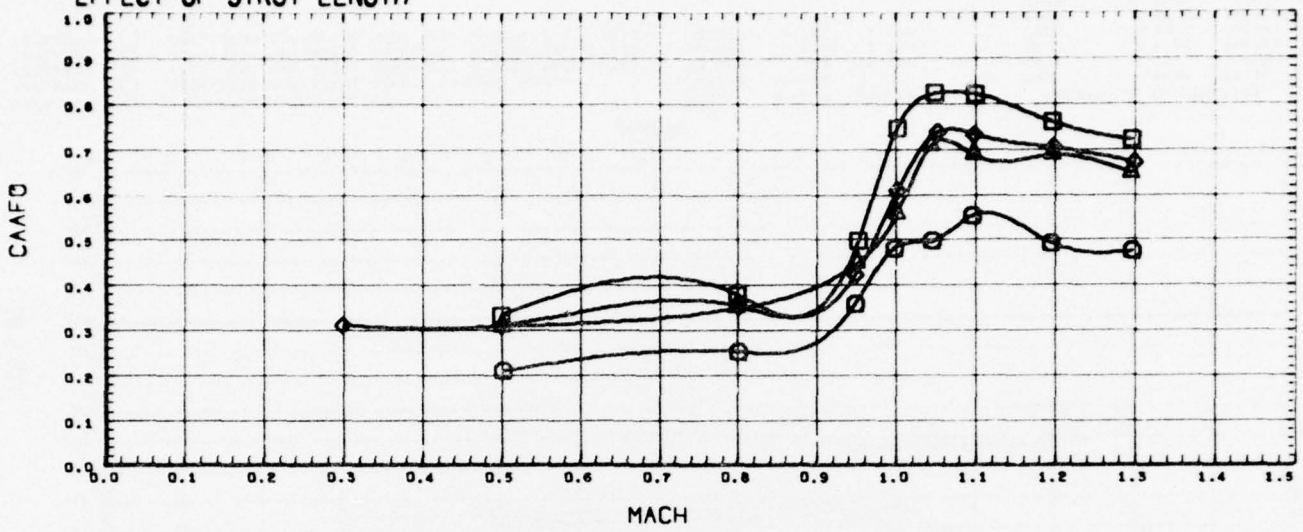


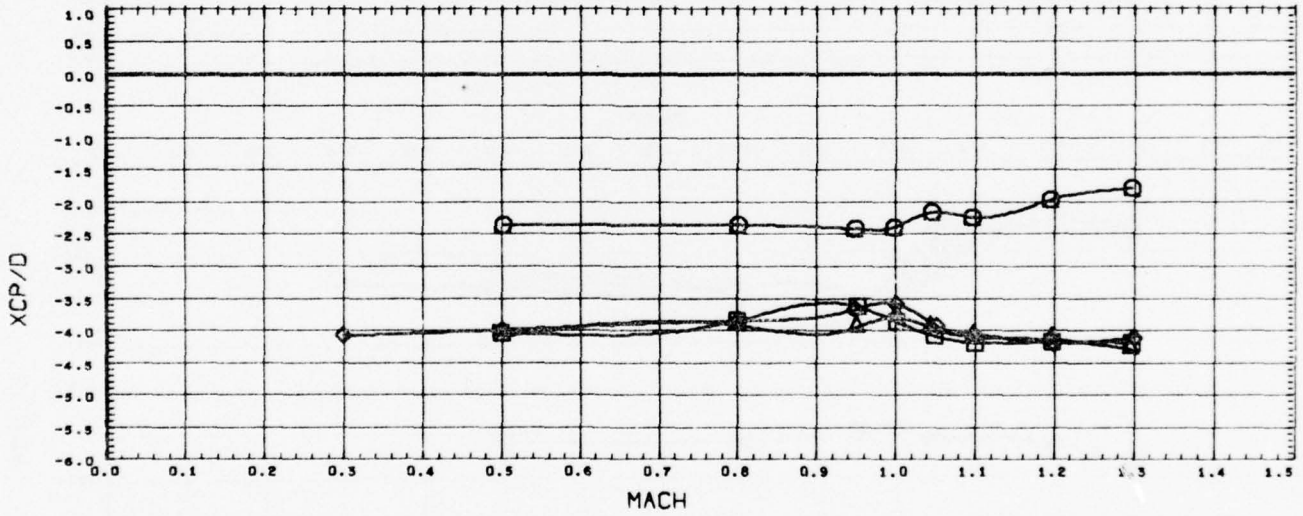


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(RTAM04)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M4	0.000	5.750	
(RTAR01)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R1	0.000	2.250	2.500
(CTAR02)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500	3.250
(RTAR06)	□	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R3	0.000	0.750	4.000

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH

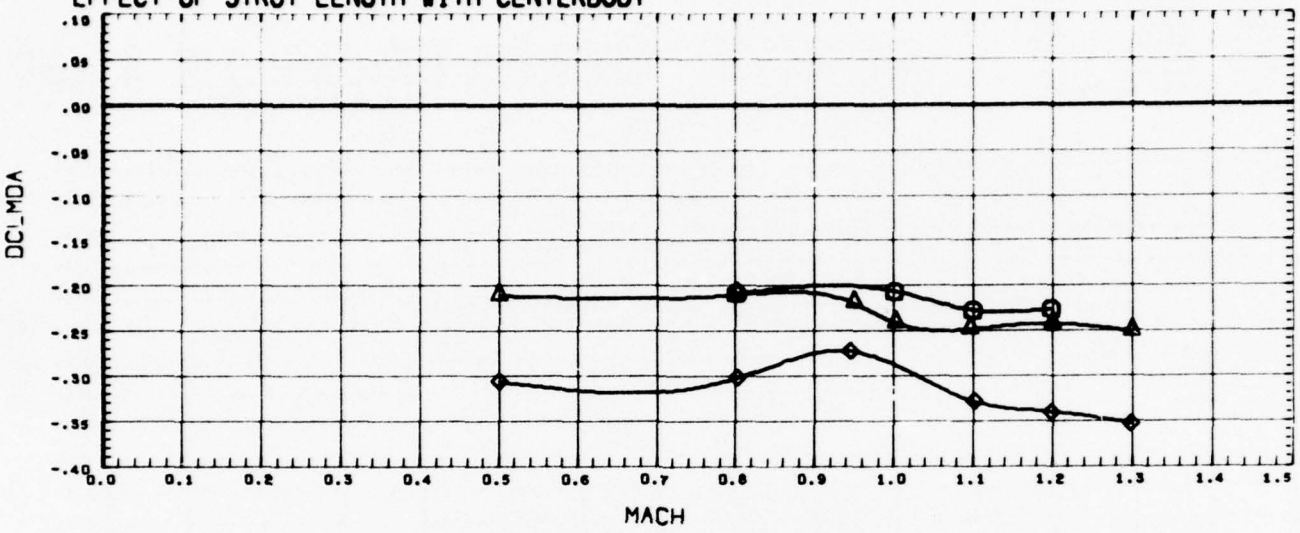


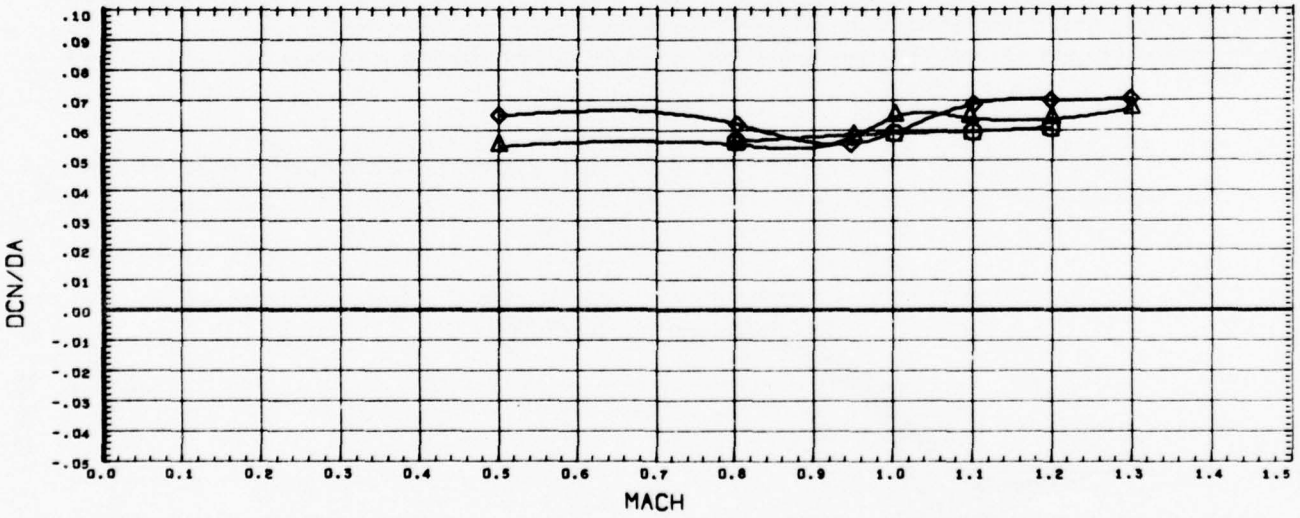


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(BTAM04)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M4	0.000	5.750	
(BTAR01)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R1	0.000	2.250	2.500
(BTAR02)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500	3.250
(BTAR06)	□	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R3	0.000	0.750	4.000

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH WITH CENTERBODY

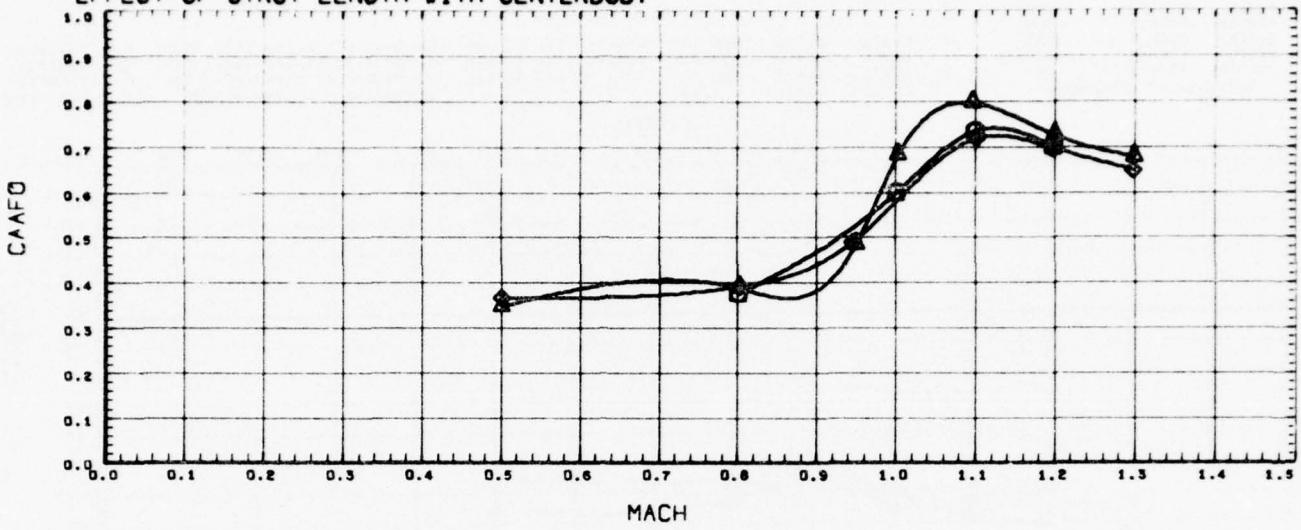


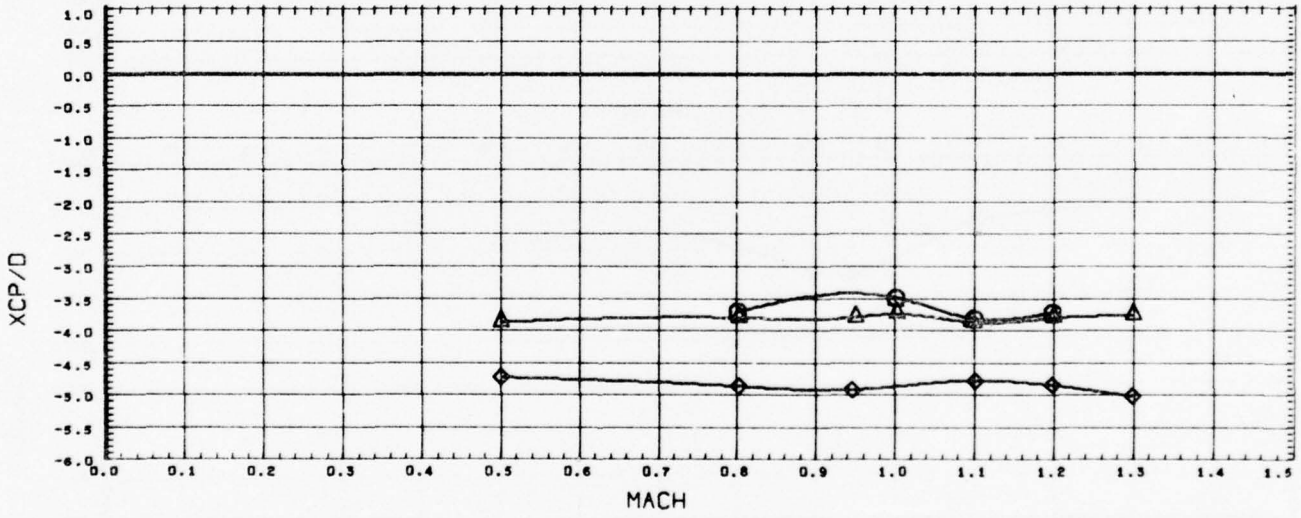


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(RTAR08)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	0.000	2.250	2.500
(RTAR18)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	0.000	1.500	3.250
(RTAR17)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R6C2	0.000	2.250	4.000

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH WITH CENTERBODY

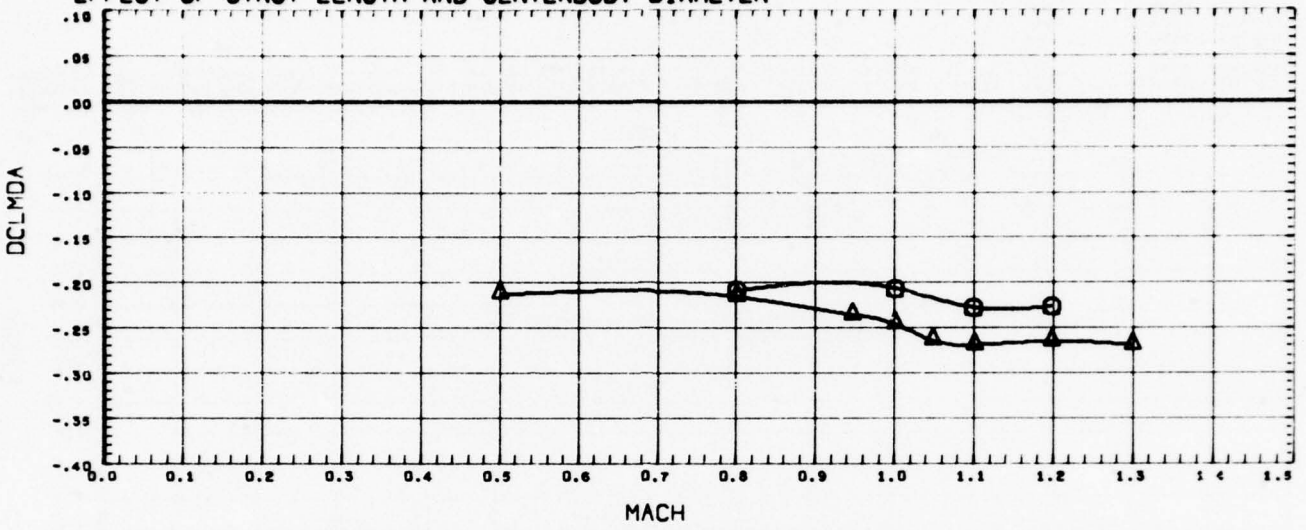


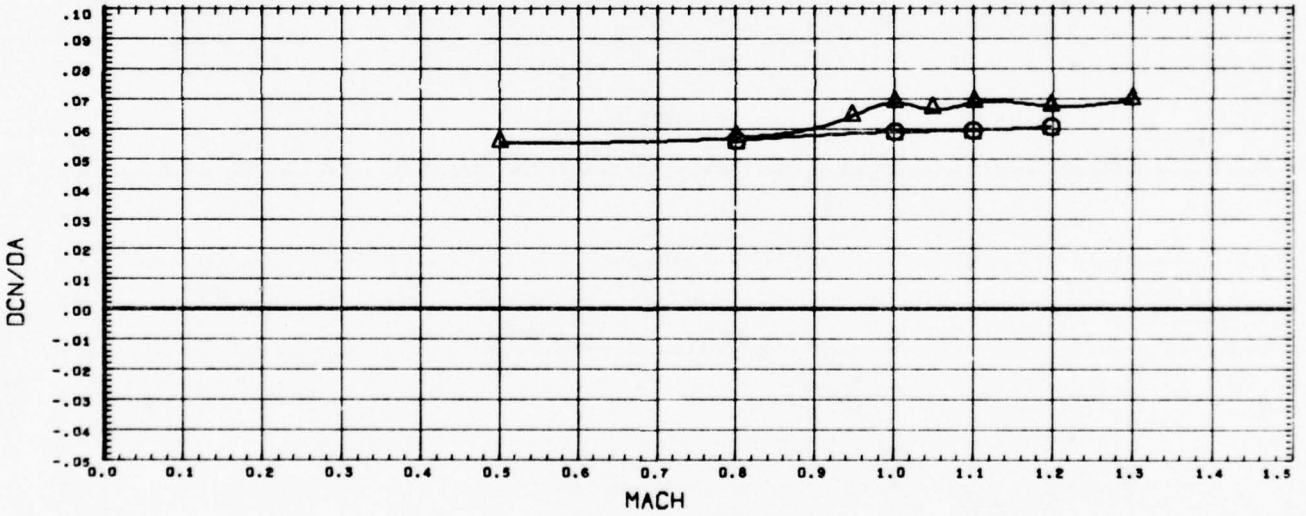


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(BTAR08)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	0.000	2.250	2.500
(BTAR18)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	0.000	1.500	3.250
(BTAR17)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R6C2	0.000	2.250	4.000

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH AND CENTERBODY DIAMETER

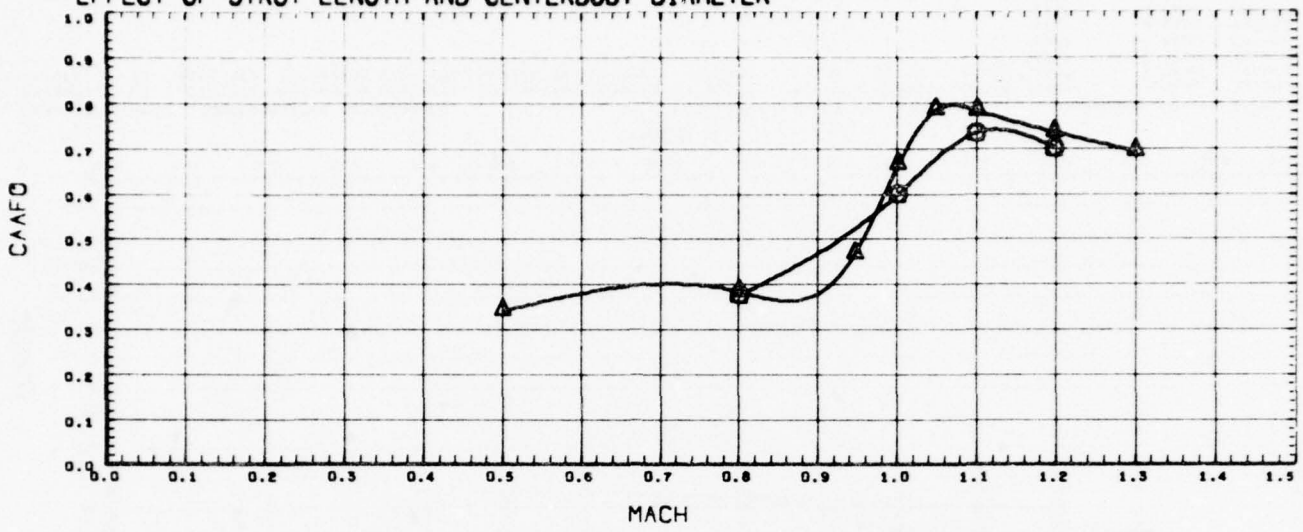


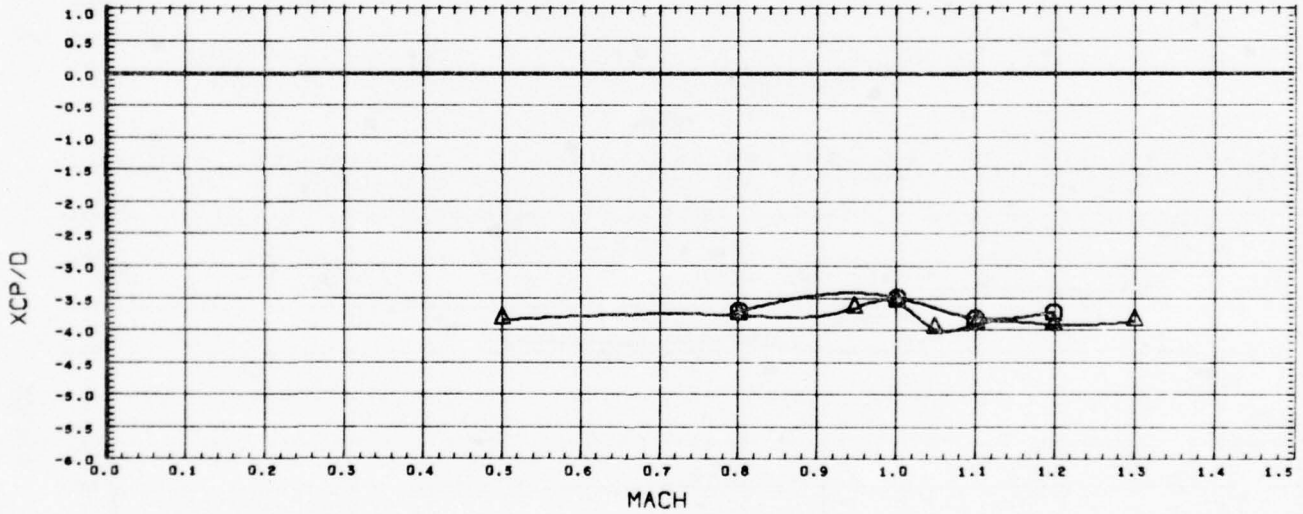


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(RTAR08)	⍜	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	2.250	2.500	5.000	0.500
(RTAR09)	⍙	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C1	1.500	3.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH AND CENTERBODY DIAMETER

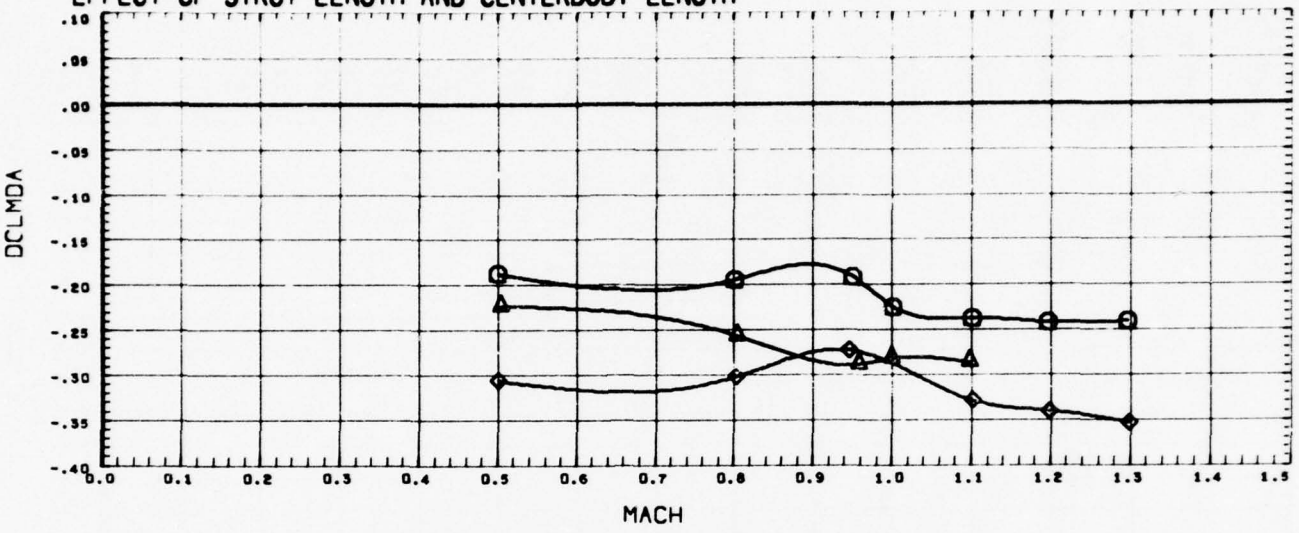


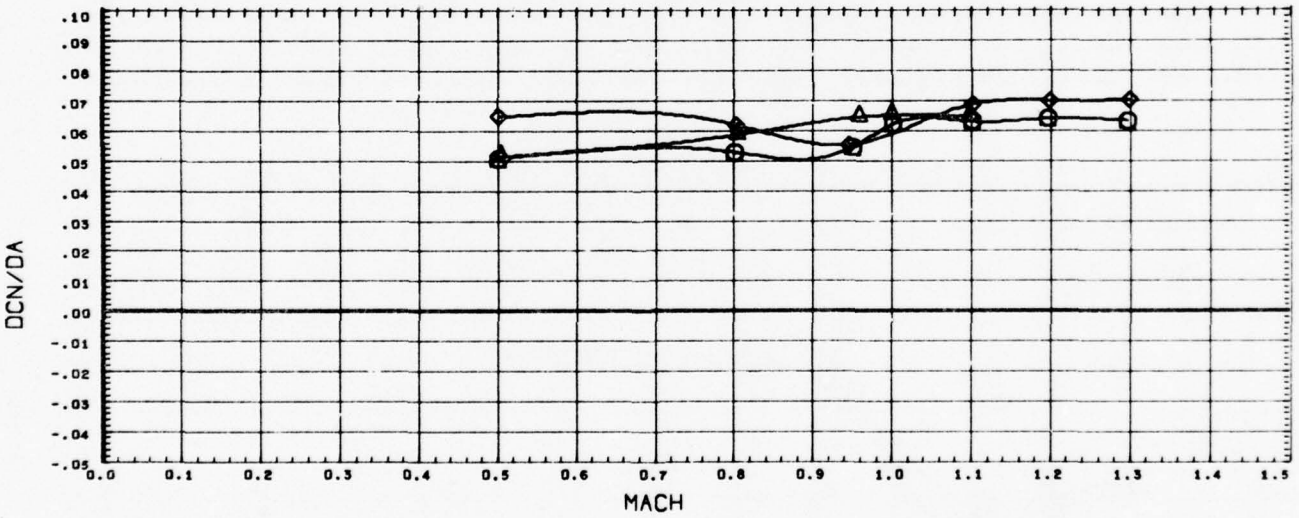


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(BTAR08)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	2.250	2.500	5.000	0.500
(BTAR09)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C1	1.500	3.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0586	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH AND CENTERBODY LENGTH

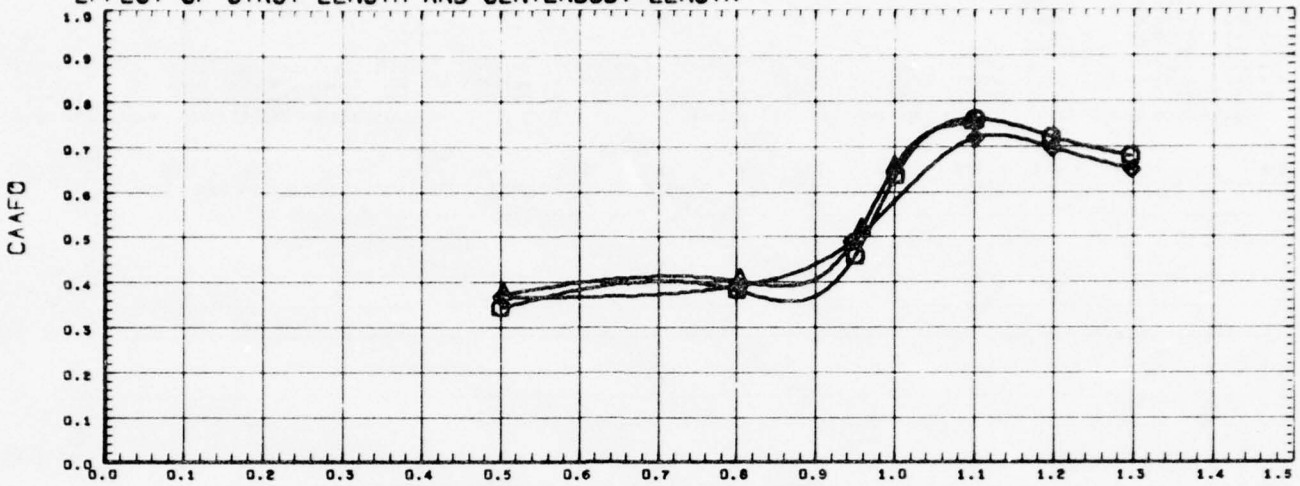


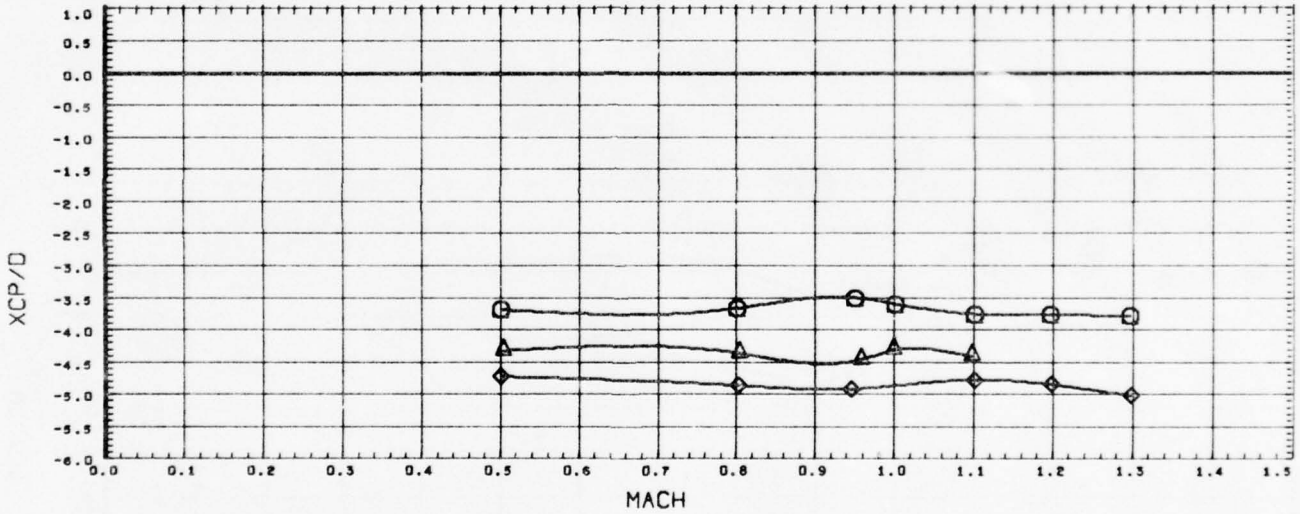


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(RTAR21)	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C4	1.500	3.250	6.500	0.500
(RTAR22)	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R6C4	2.250	4.000	6.500	0.500
(RTAR17)	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R6C2	2.250	4.000	5.000	0.500

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT LENGTH AND CENTERBODY LENGTH

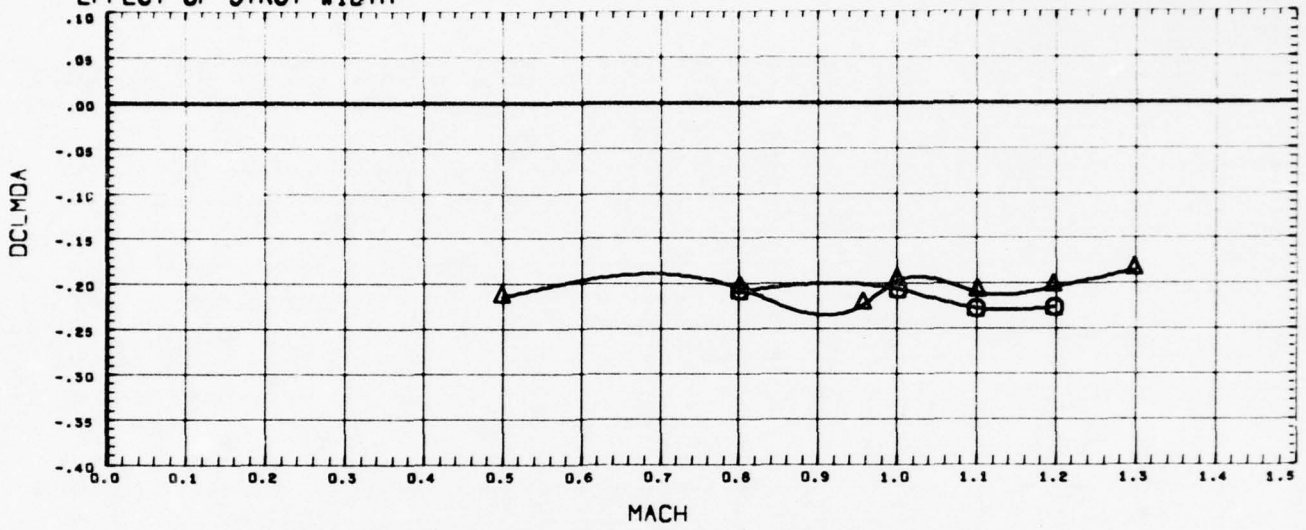


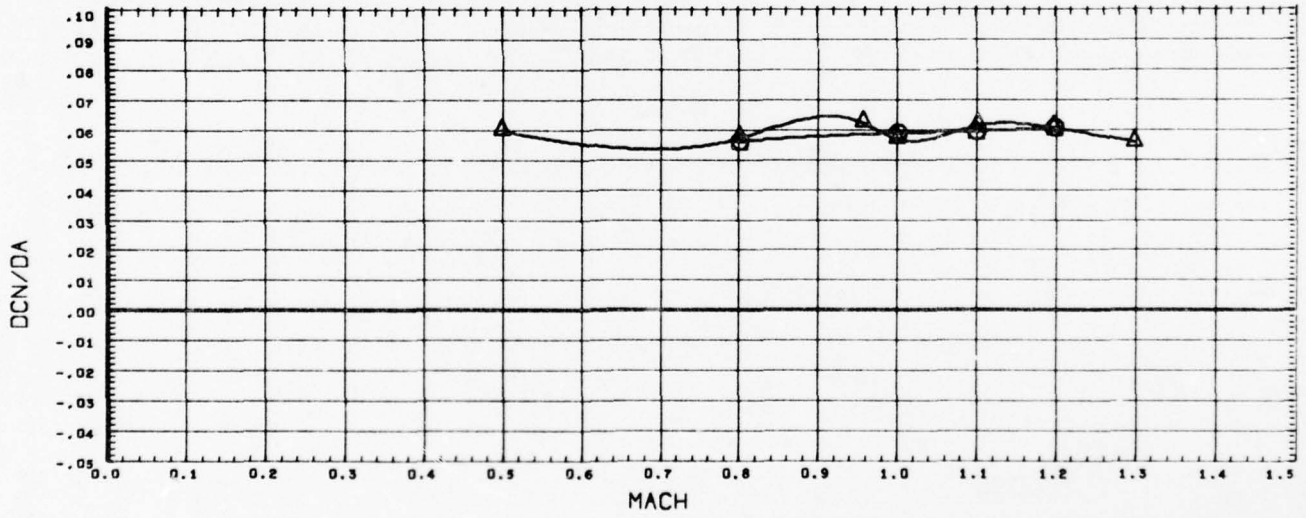


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(BTAR21)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C4	1.500	3.250	6.500	0.500
(BTAR22)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R6C4	2.250	4.000	6.500	0.500
(BTAR17)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R6C2	2.250	4.000	5.000	0.500

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT WIDTH

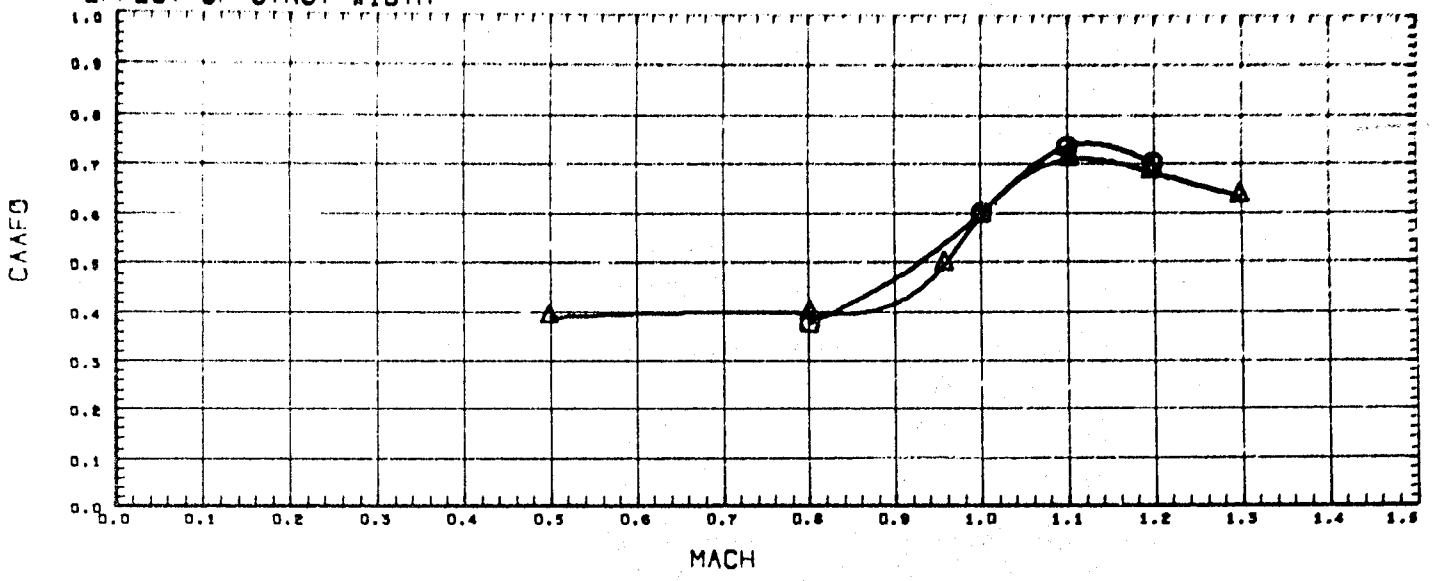


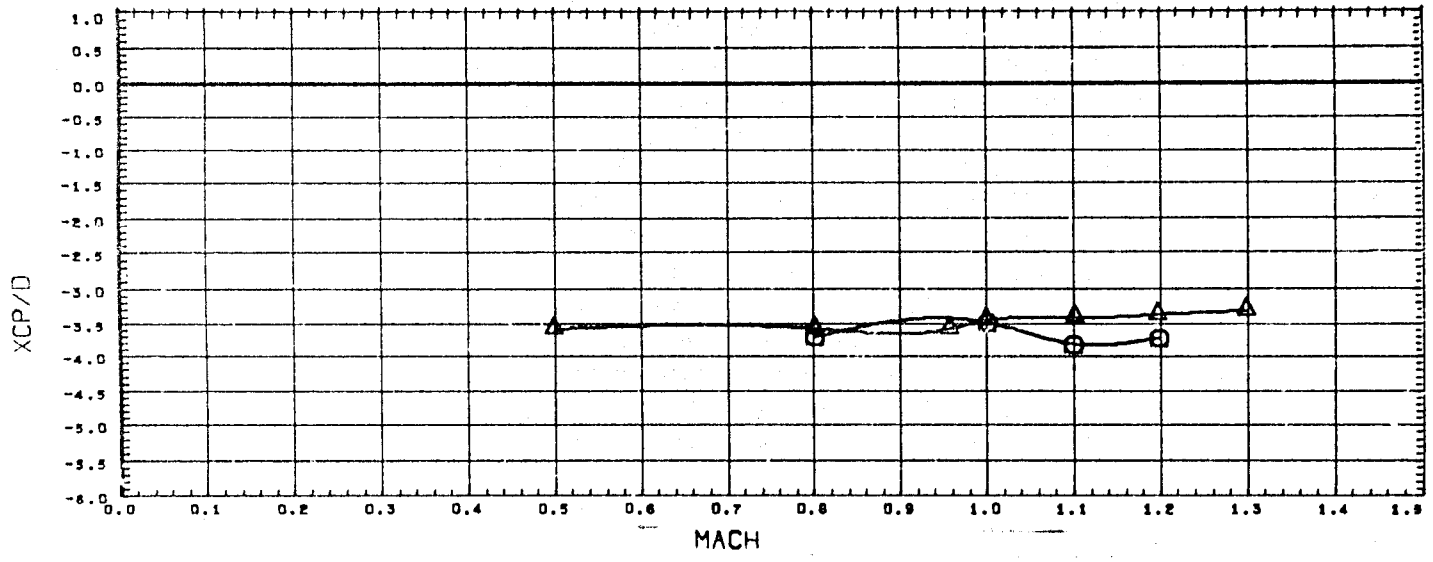


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	S-WDTH	C-LGTH	C-DIA
(RTAR08)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	2.250	0.230	5.000	0.500
(RTAR14)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R5C1	2.250	0.400	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF STRUT WIDTH

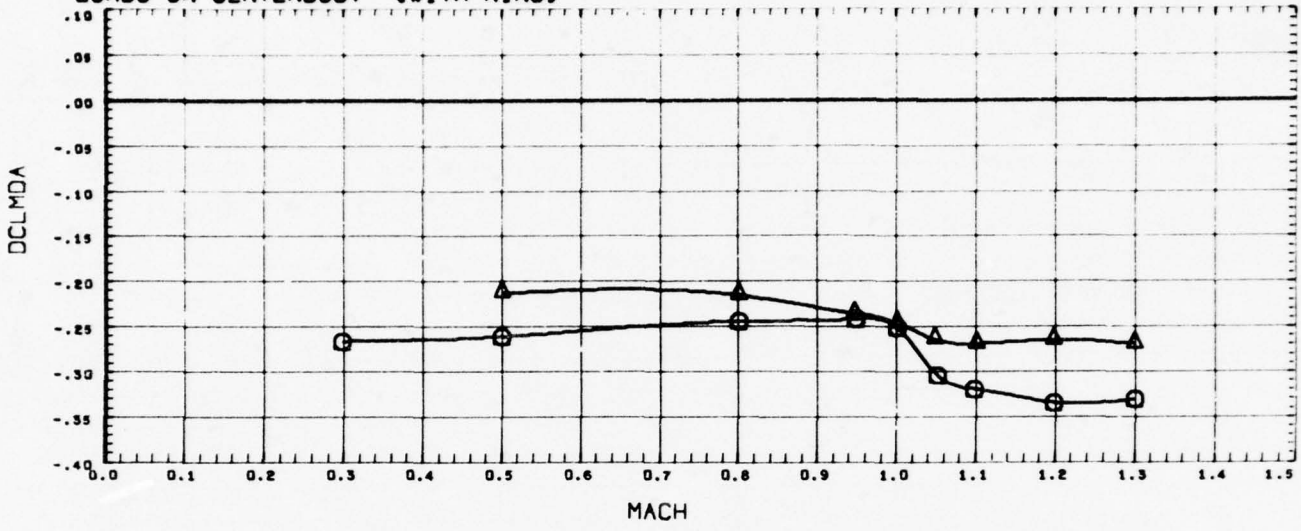


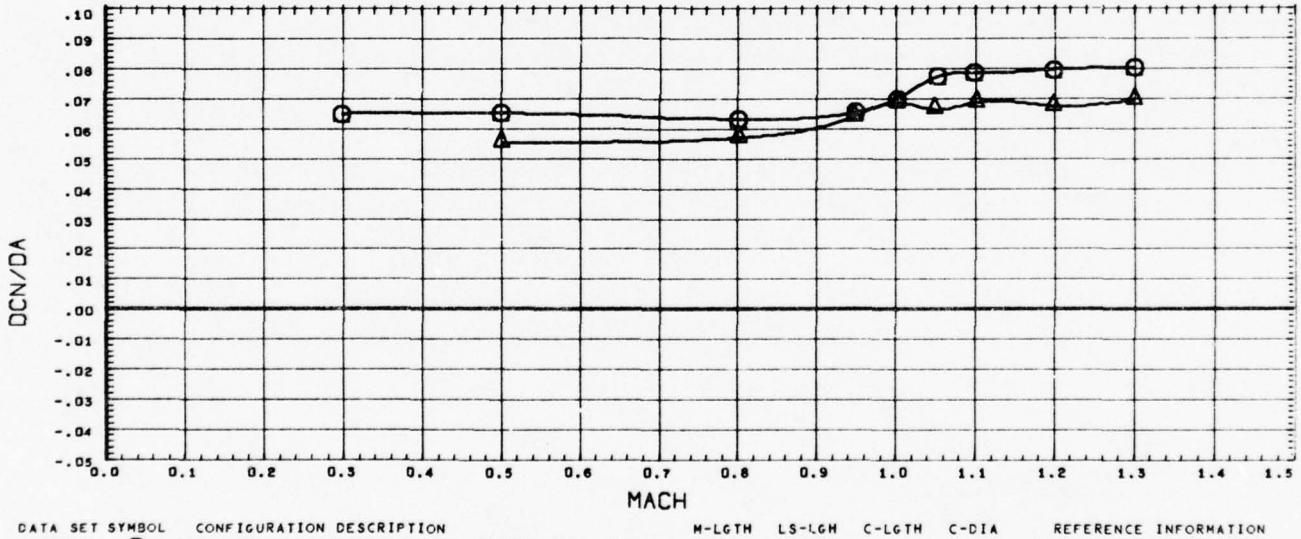


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	M-LGTH	S-WDTH	C-LGTH	C-DIA
(BTAR08)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	2.250	0.200	5.000	0.500
(BTAR14)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R5C1	2.250	0.400	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

LOADS ON CENTERBODY (WITH RING)

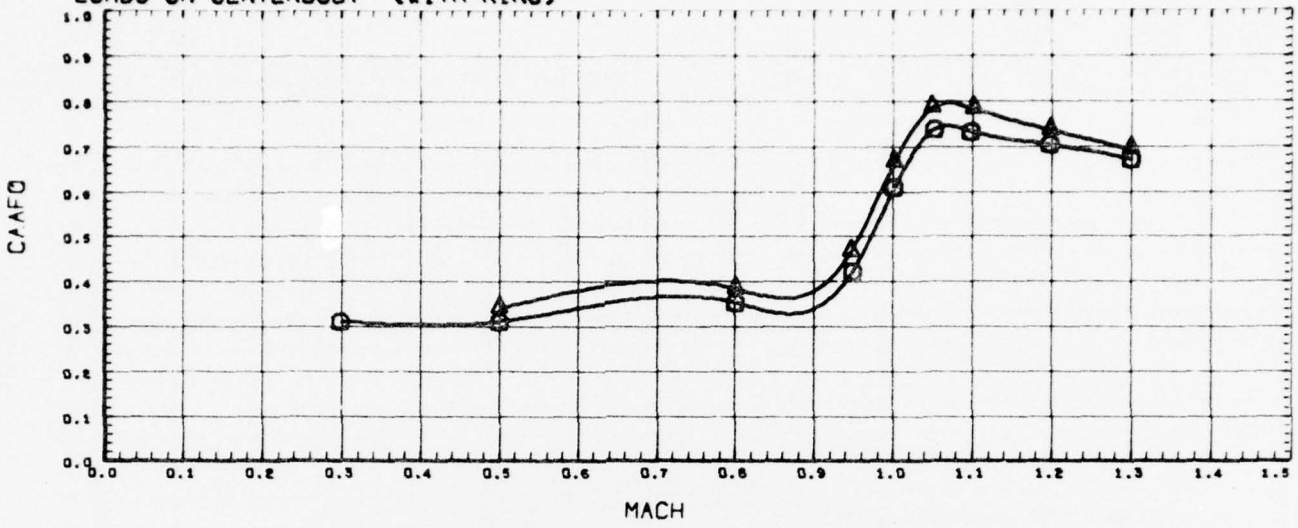


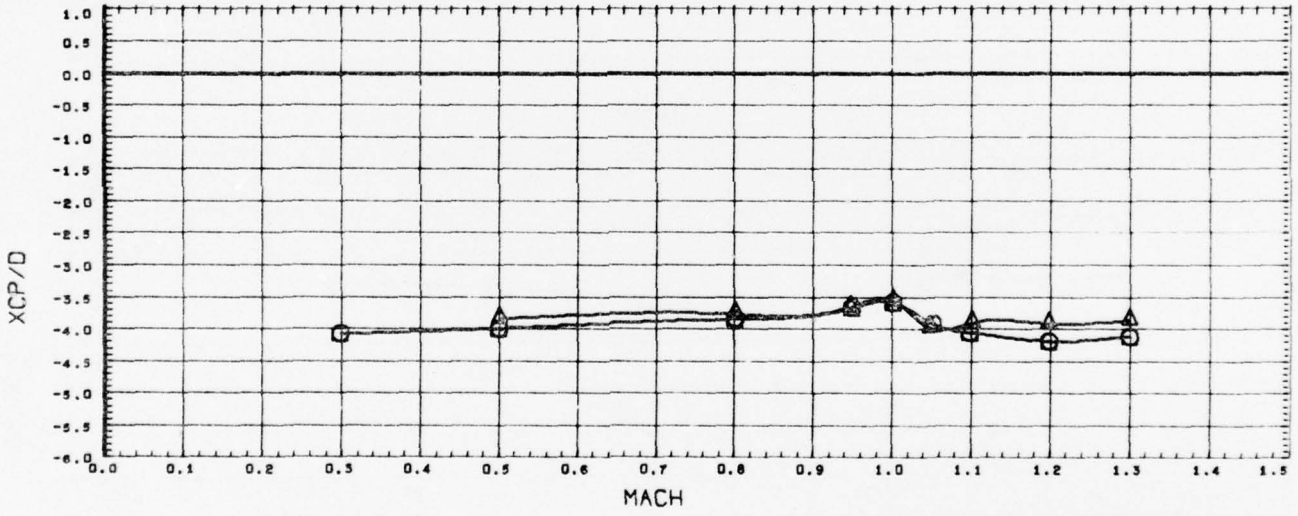


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(CTAR02)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	1.500	3.950		
(RTAR09)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C1	1.500	3.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

LOADS ON CENTERBODY (WITH RING)

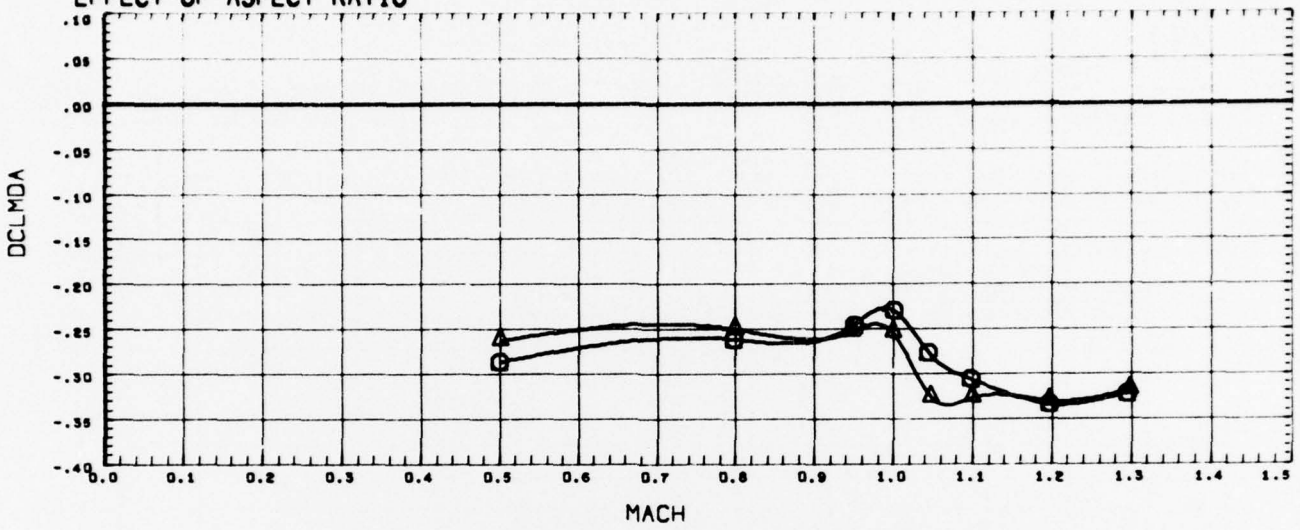


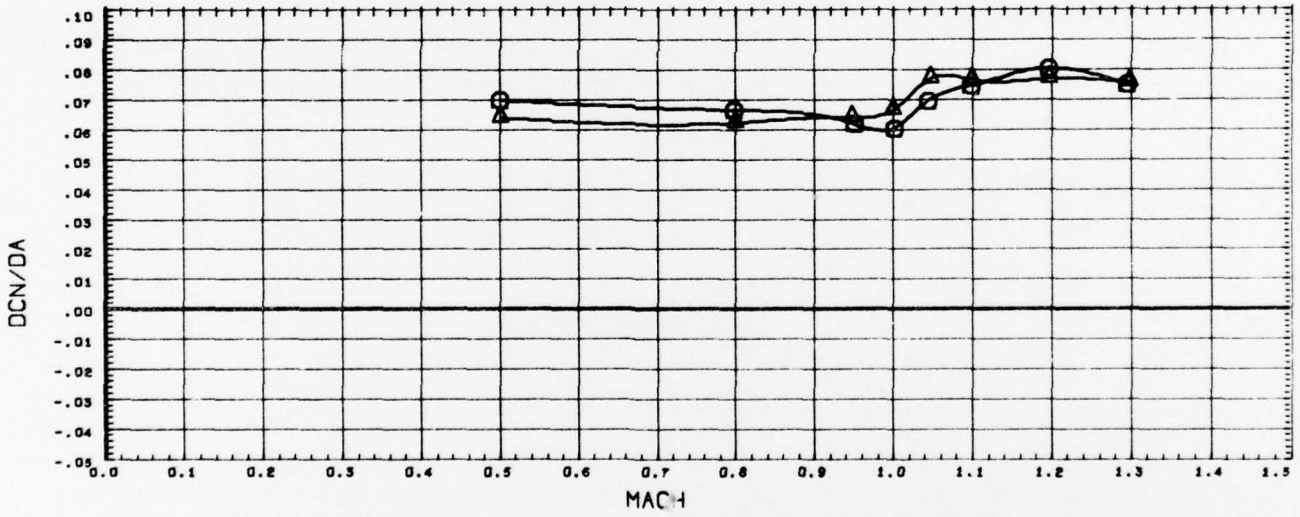


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(BTAR02)	⍜	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	1.500	3.250		
(BTAR09)	⍁	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C1	1.500	3.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF ASPECT RATIO

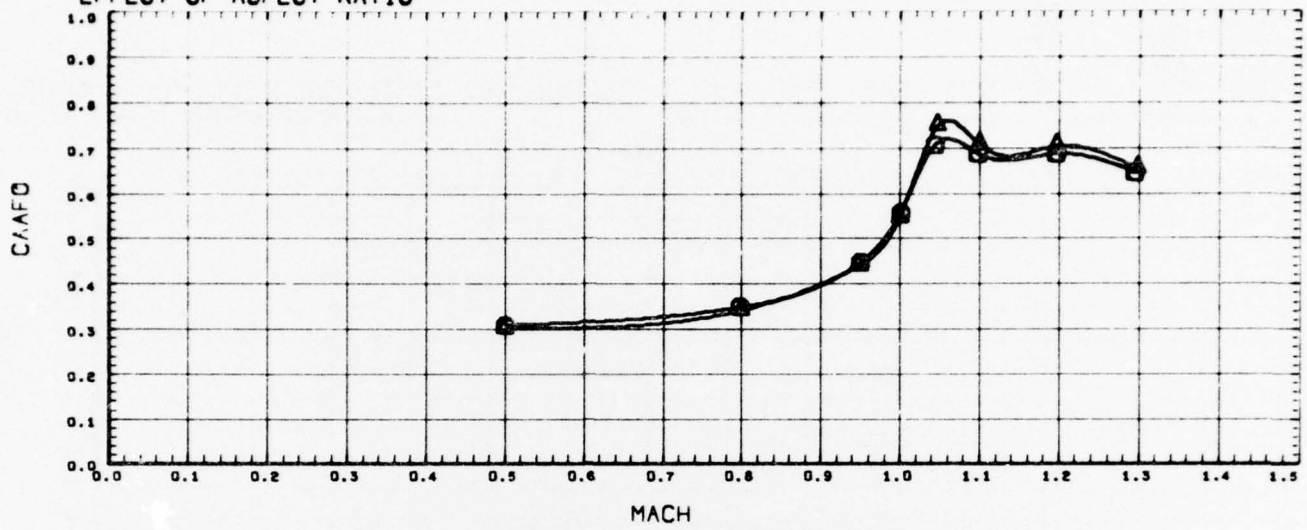


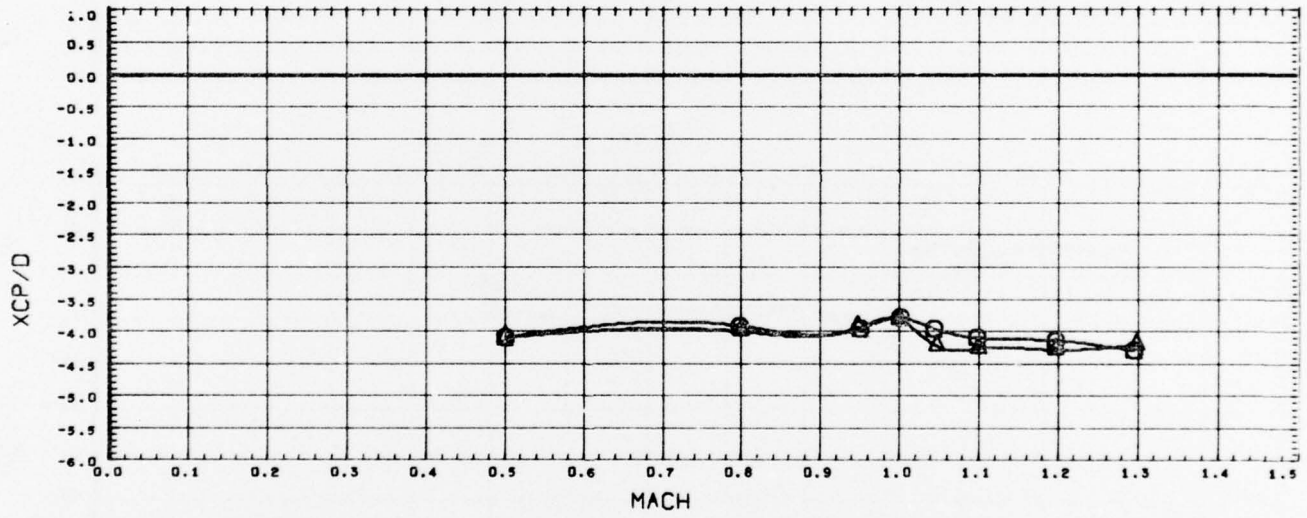


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	S-WDTH	R-WDTH
(RTAR01)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R1	2.250	2.500	0.200	1.000
(RTAR07)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R4	2.250	3.000	0.200	1.000

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF ASPECT RATIO

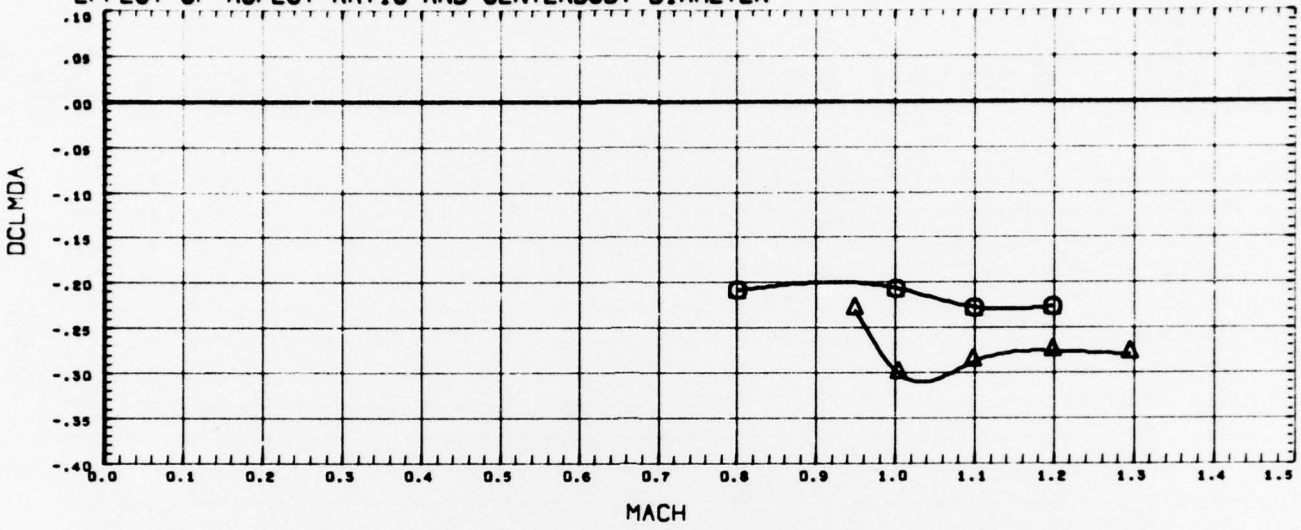


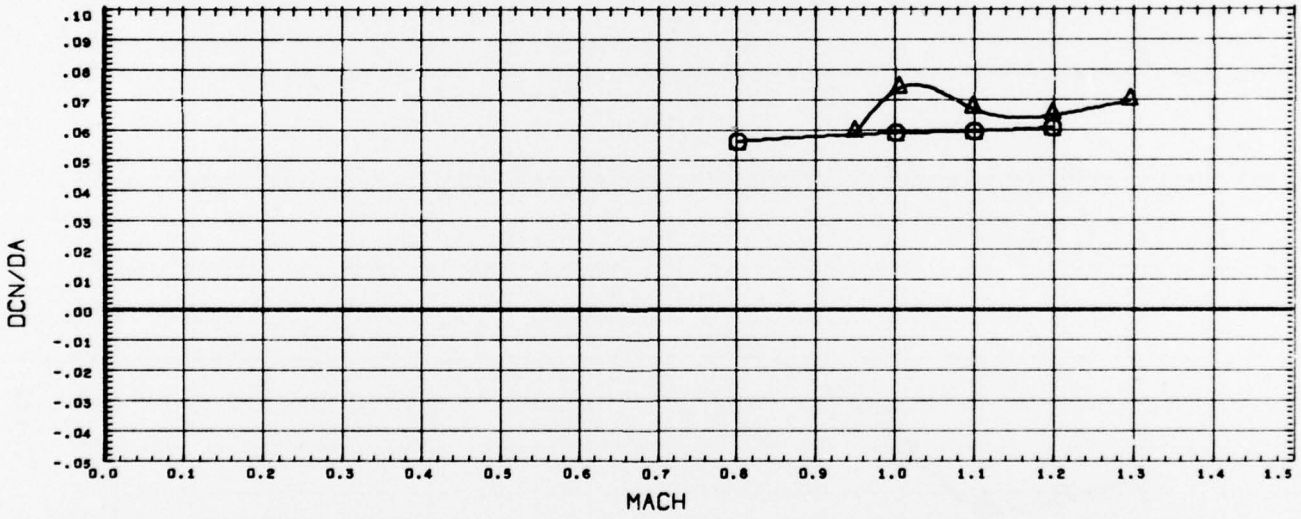


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	S-WDTH	R-WDTH
(BTAR01)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R1	2.250	2.*00	0.200	1.000
(BTAR07)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R4	2.250	3.000	0.200	1.000

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF ASPECT RATIO AND CENTERBODY DIAMETER

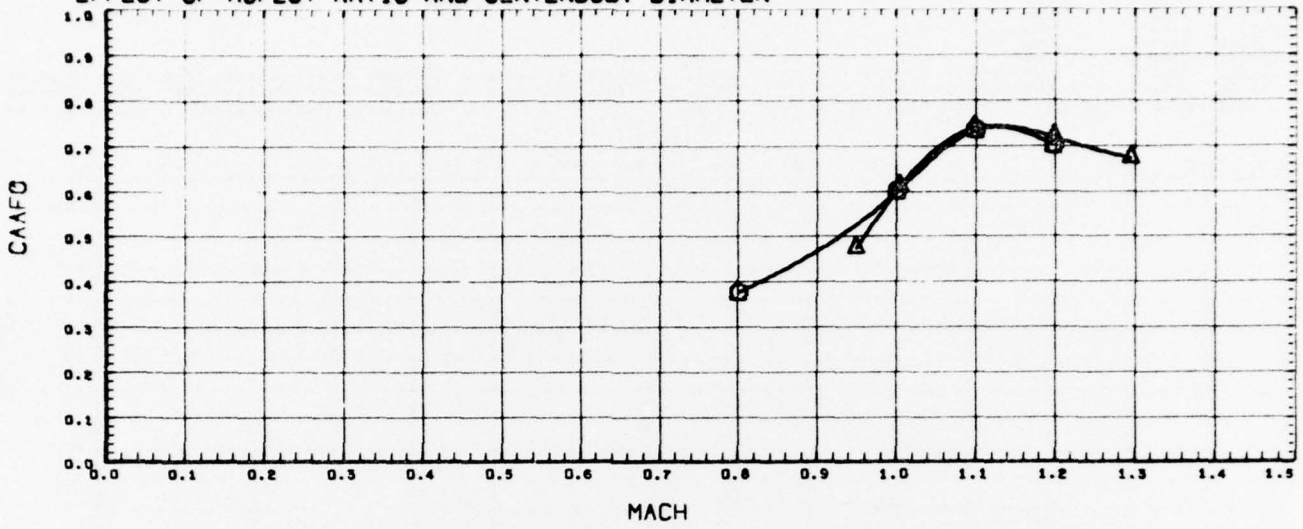


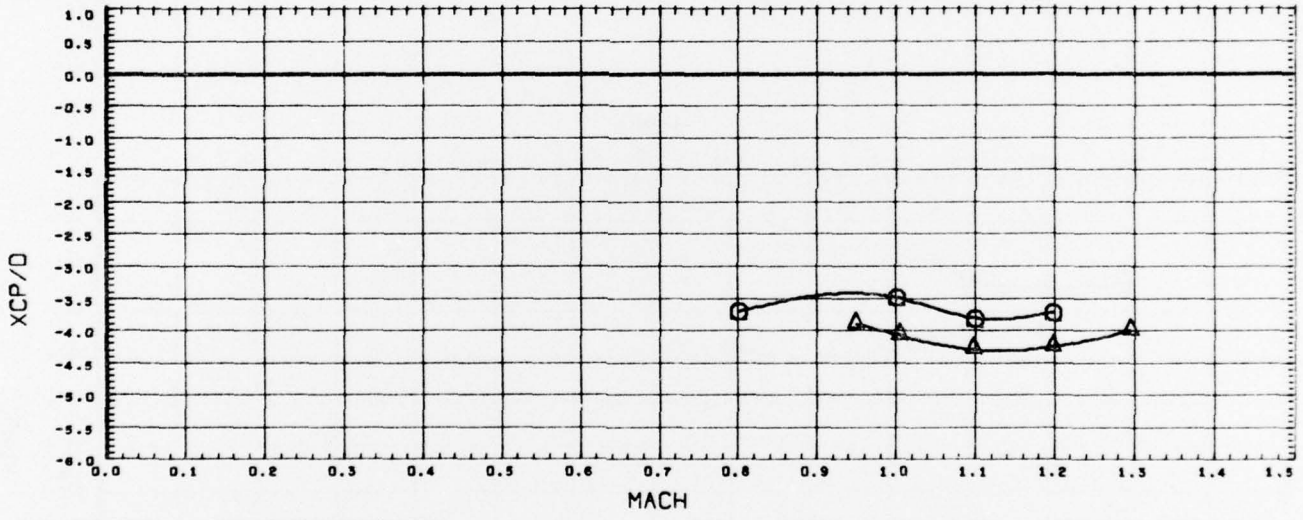


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(RTAR08)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	0.000	2.250	5.000	0.500
(RTAR13)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R4C1	0.000	2.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF ASPECT RATIO AND CENTERBODY DIAMETER

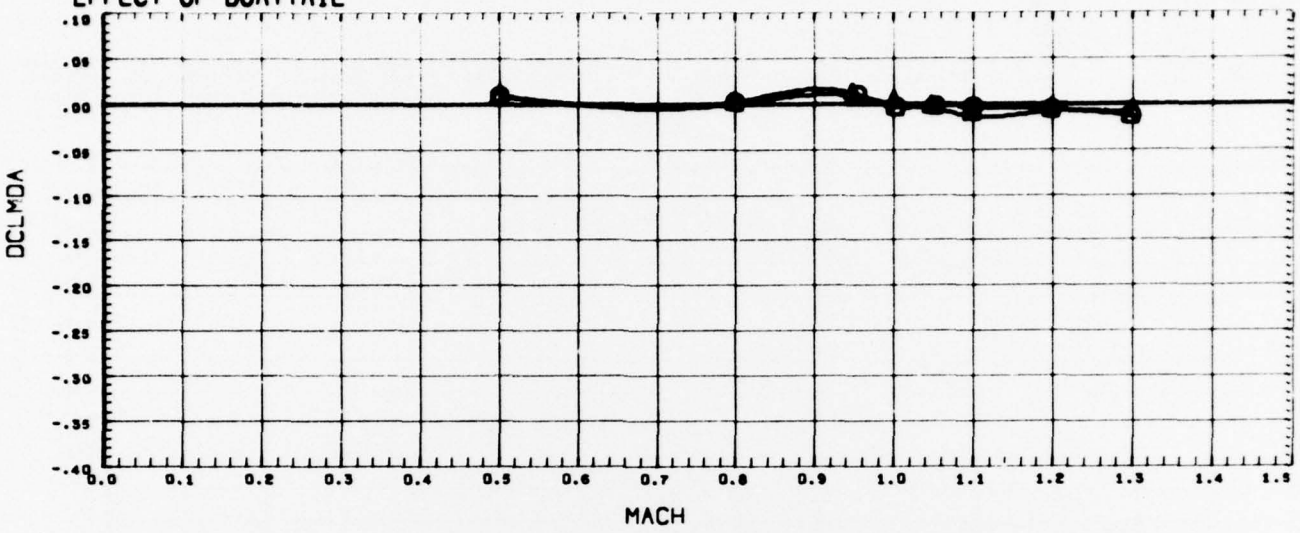


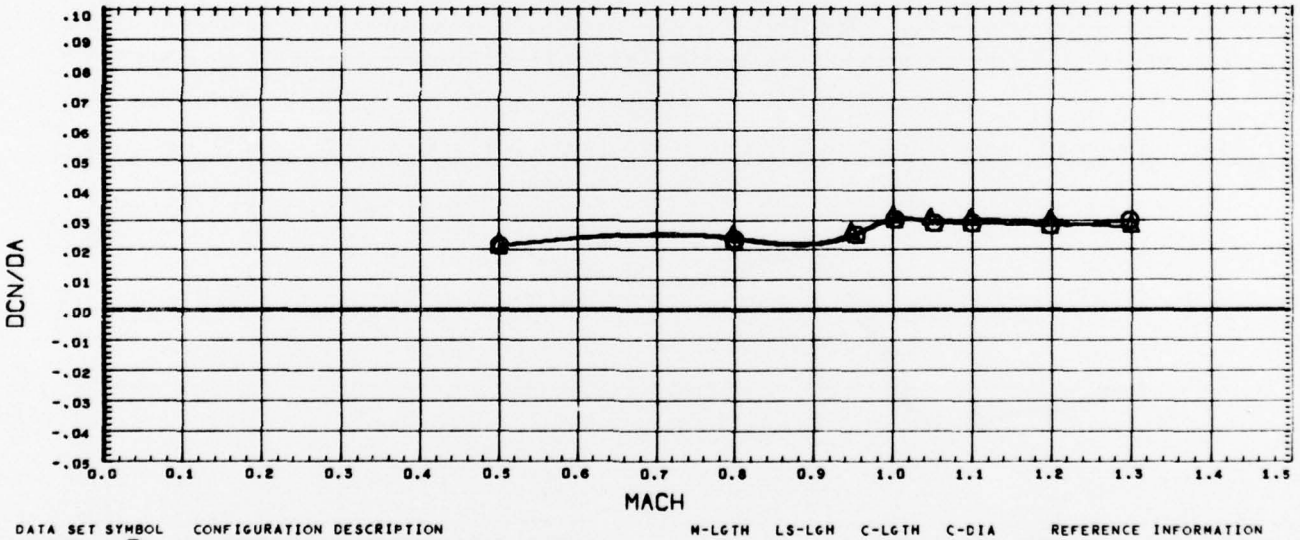


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	C-LGTH	C-DIA
(BTAR08)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R1C2	0.000	2.250	5.000	0.500
(BTAR13)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R4C1	0.000	2.250	5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF BOATTAIL

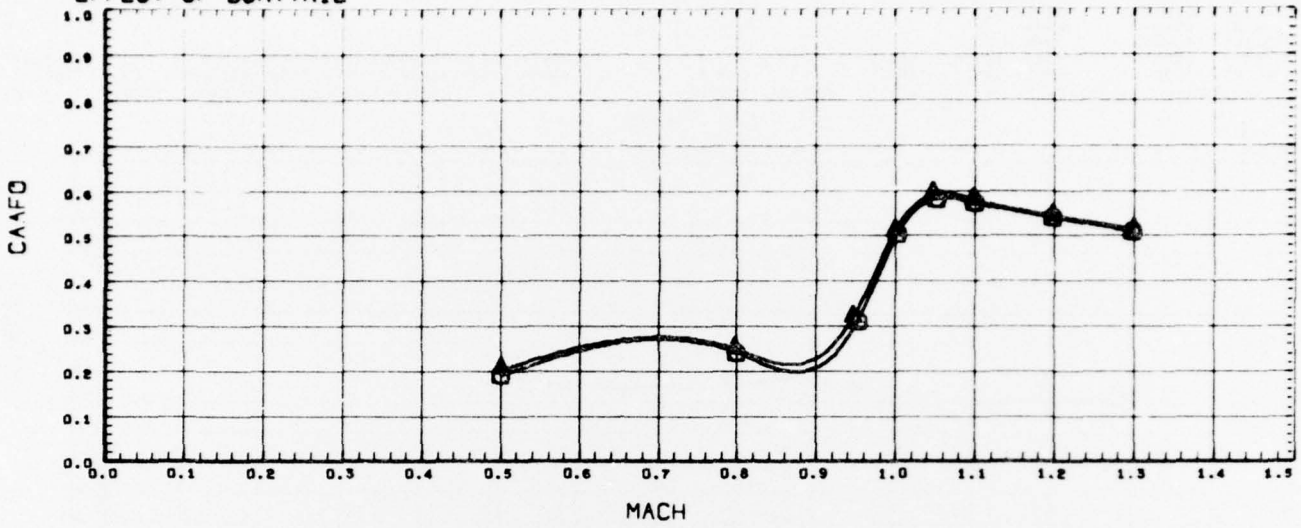


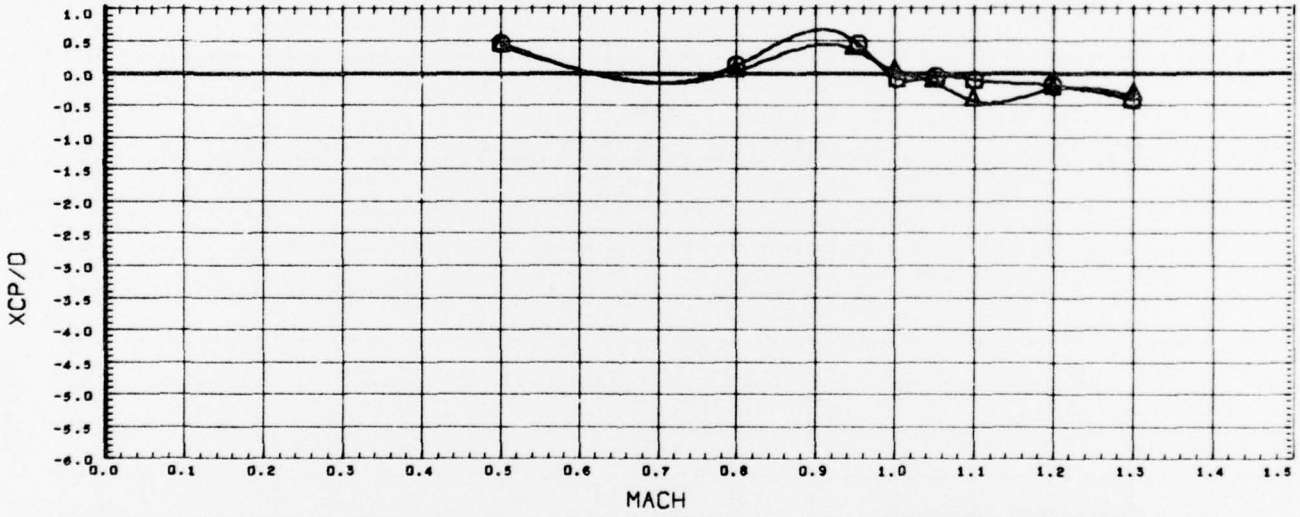


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(CTAM06)	○	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	1.500		5.000	0.400
(RTAM08)	△	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2B1C1	1.500		5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF BOATTAIL

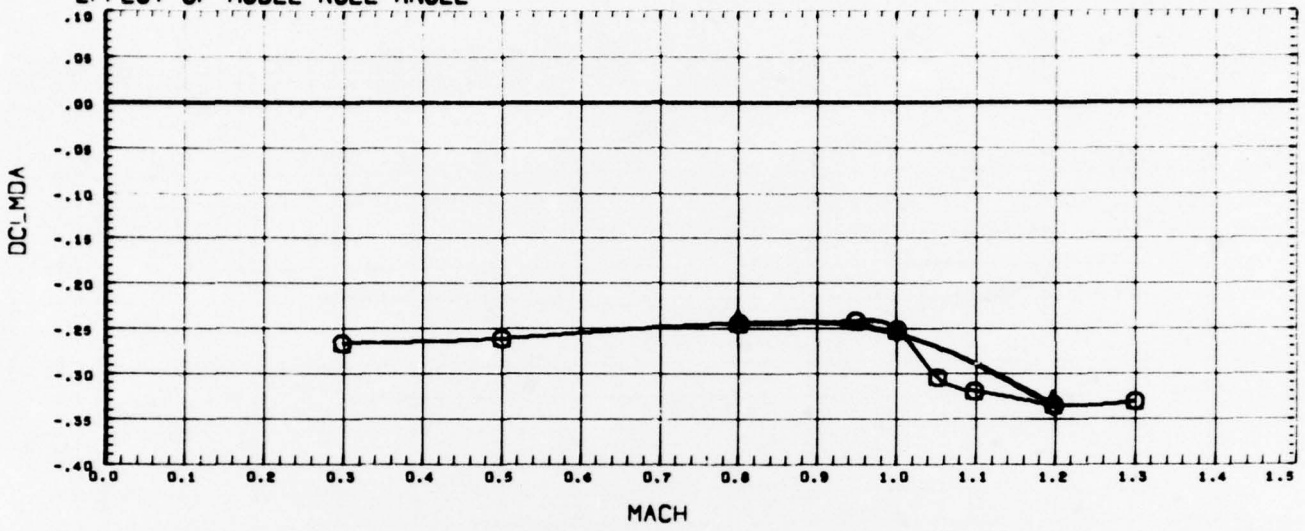


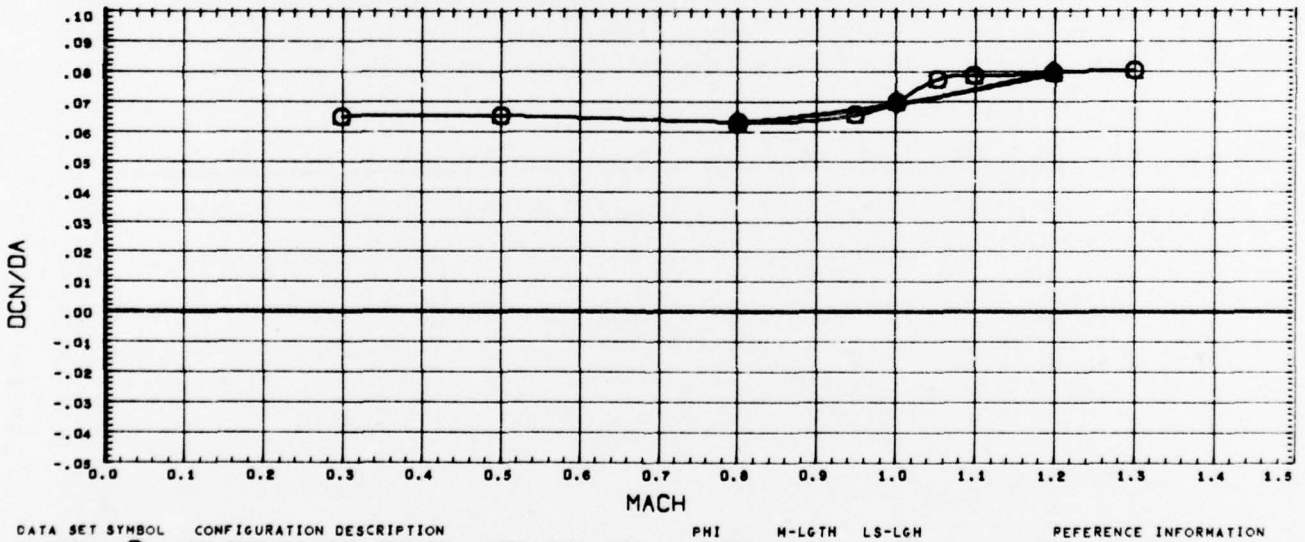


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	M-LGTH	LS-LGH	C-LGTH	C-DIA
(BTAM06)	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2C1	1.500		5.000	0.400
(BTAM08)	AEDC TEST PWT-4T201 CONE-CYLINDER, N1M2B1C1	1.500		5.000	0.400

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE

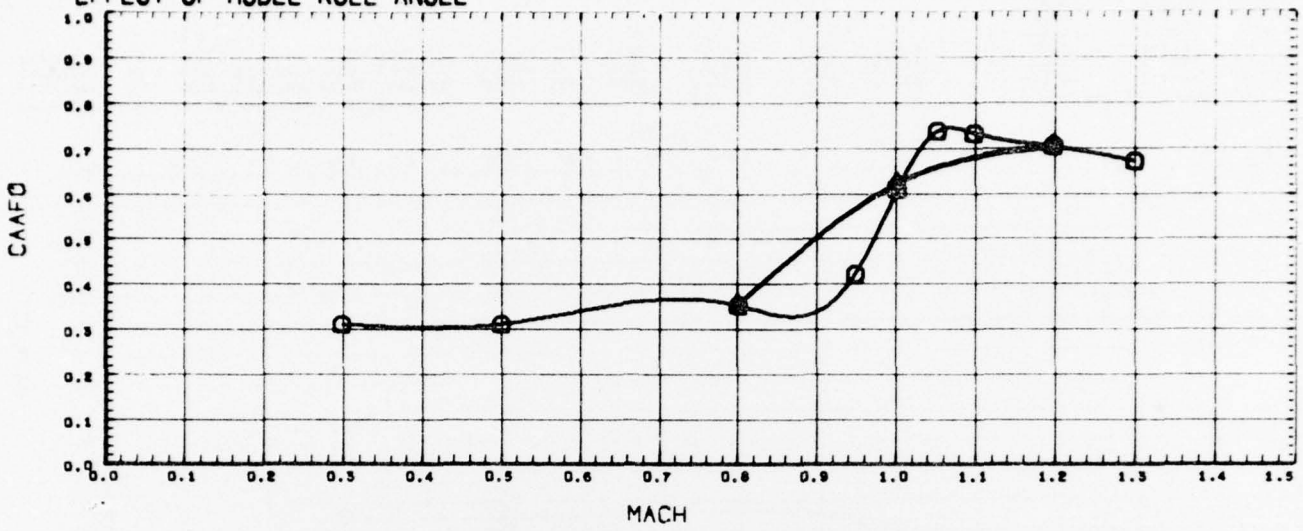


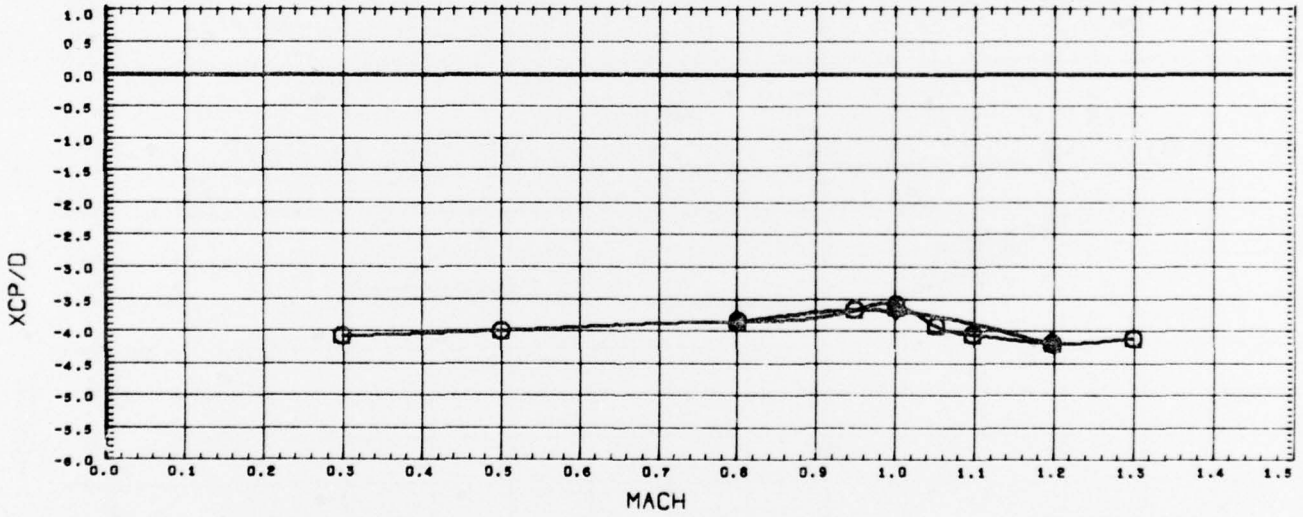


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(CTAR02) ○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500	3.250
(RTAR03) △	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	22.500	1.500	3.250
(RTAR04) ◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	45.000	1.500	3.250

PEFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE



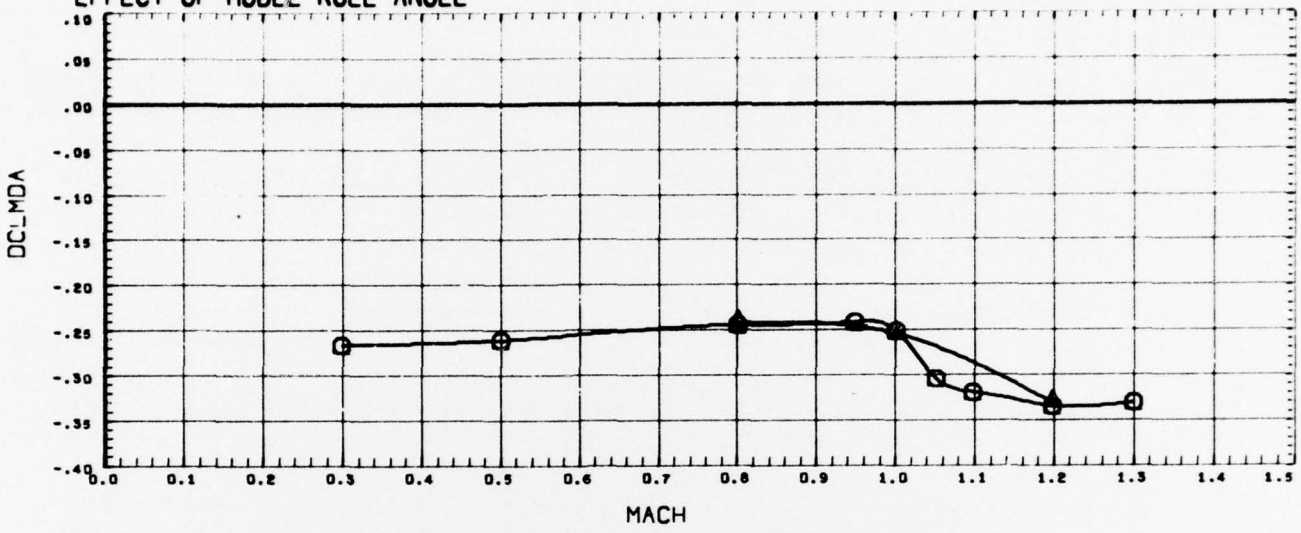


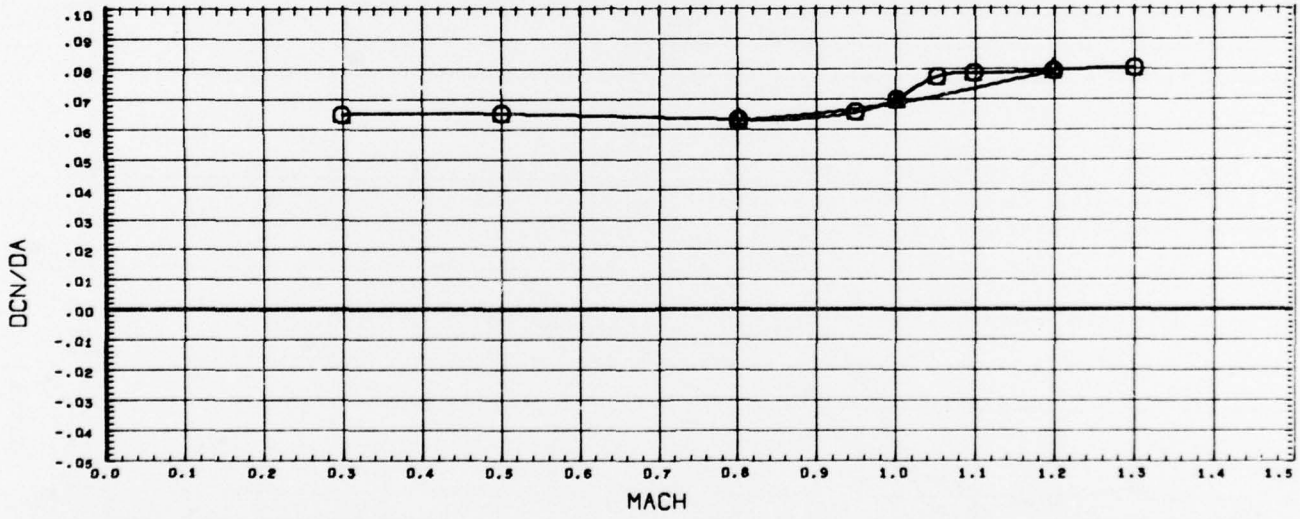
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(BTAR02)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500	3.250
(BTAR03)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	22.500	1.500	3.250
(BTAR04)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	45.000	1.500	3.250

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE

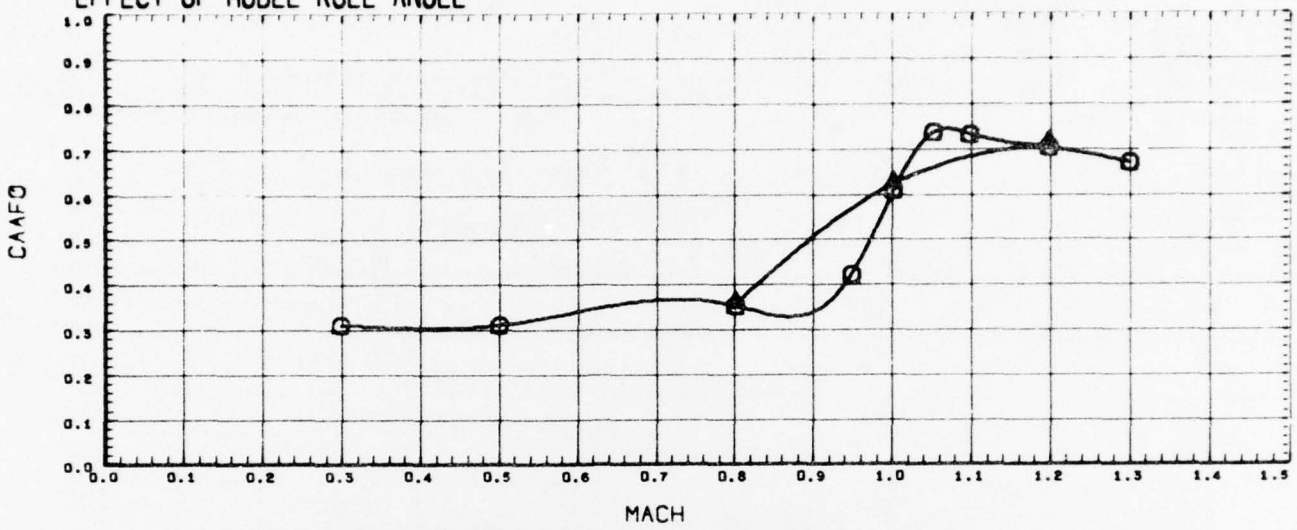


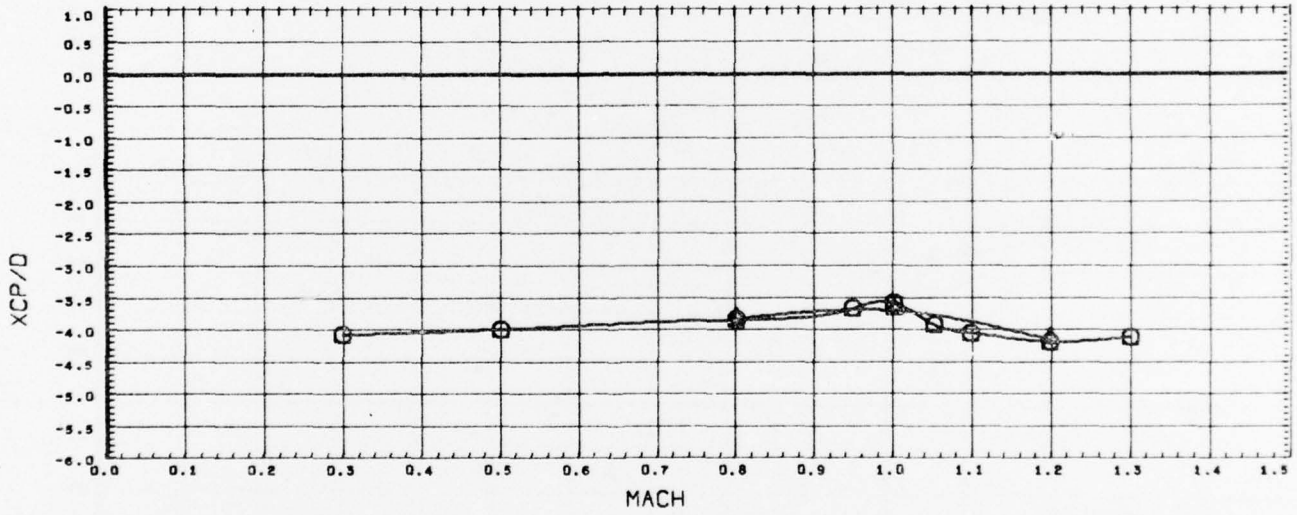


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(CTAR02)	⊗	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500	3.250
(RTAR05)	⊠	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	180.000	1.500	3.250

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE

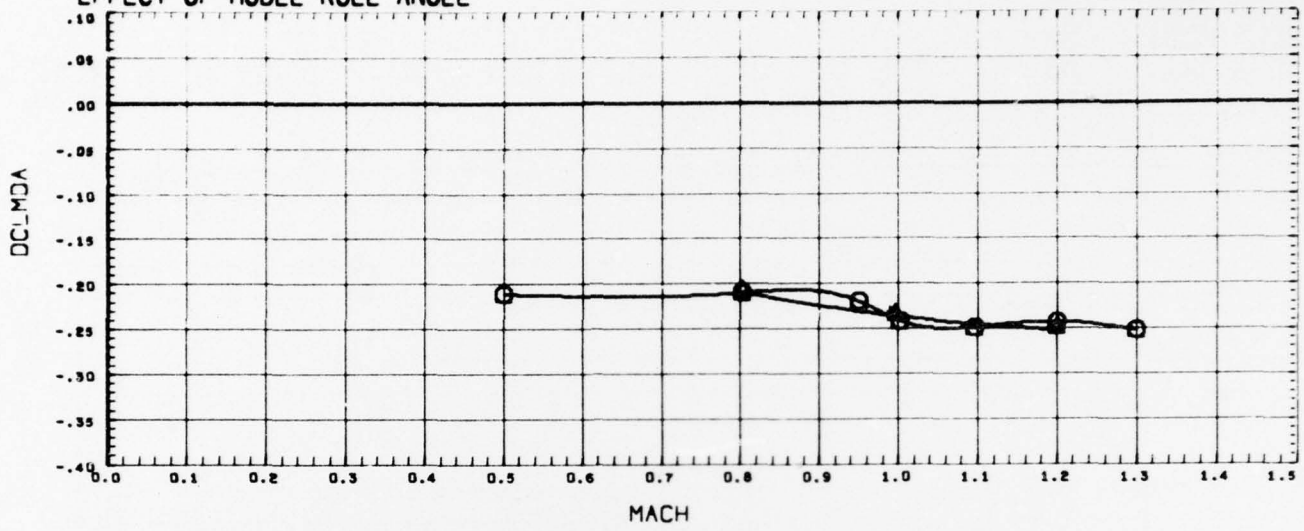


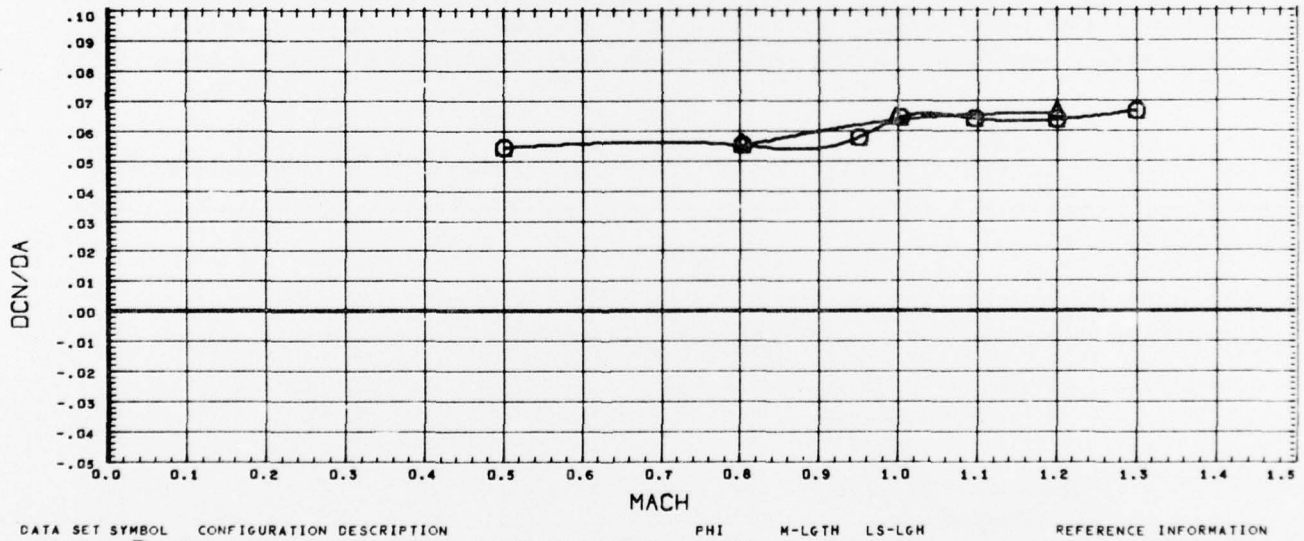


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(BTAR02)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	0.000	1.500	3.250
(BTAR05)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL, N1R2	180.000	1.500	3.250

PEFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE



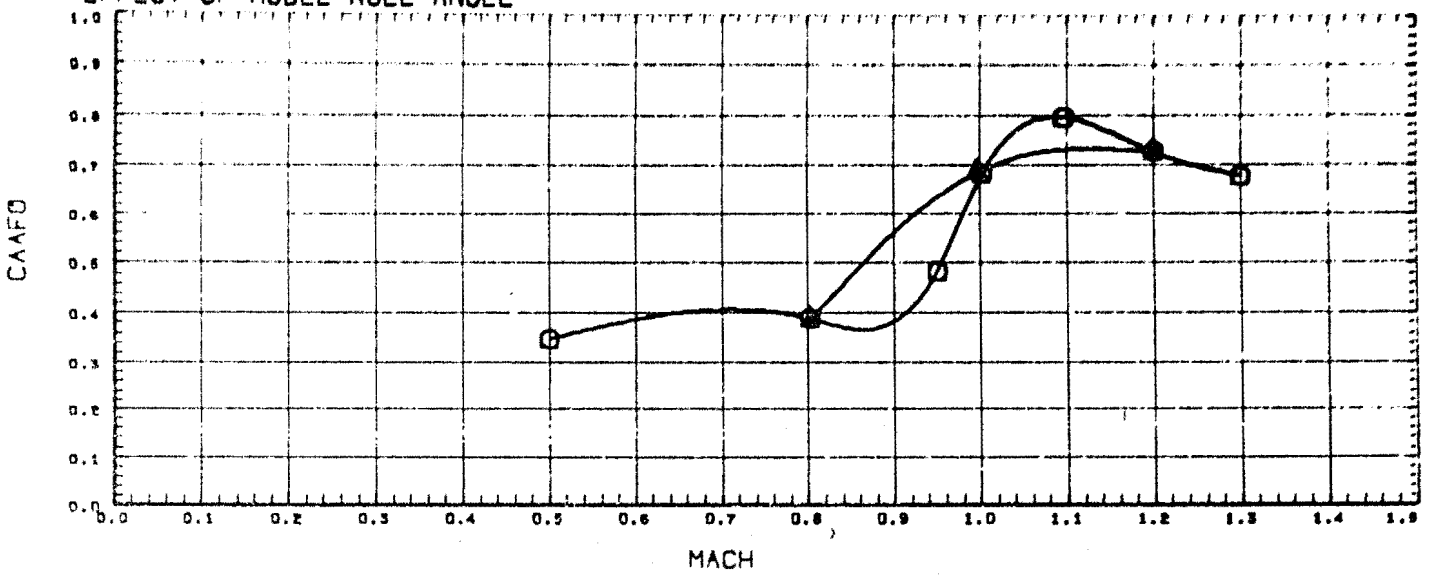


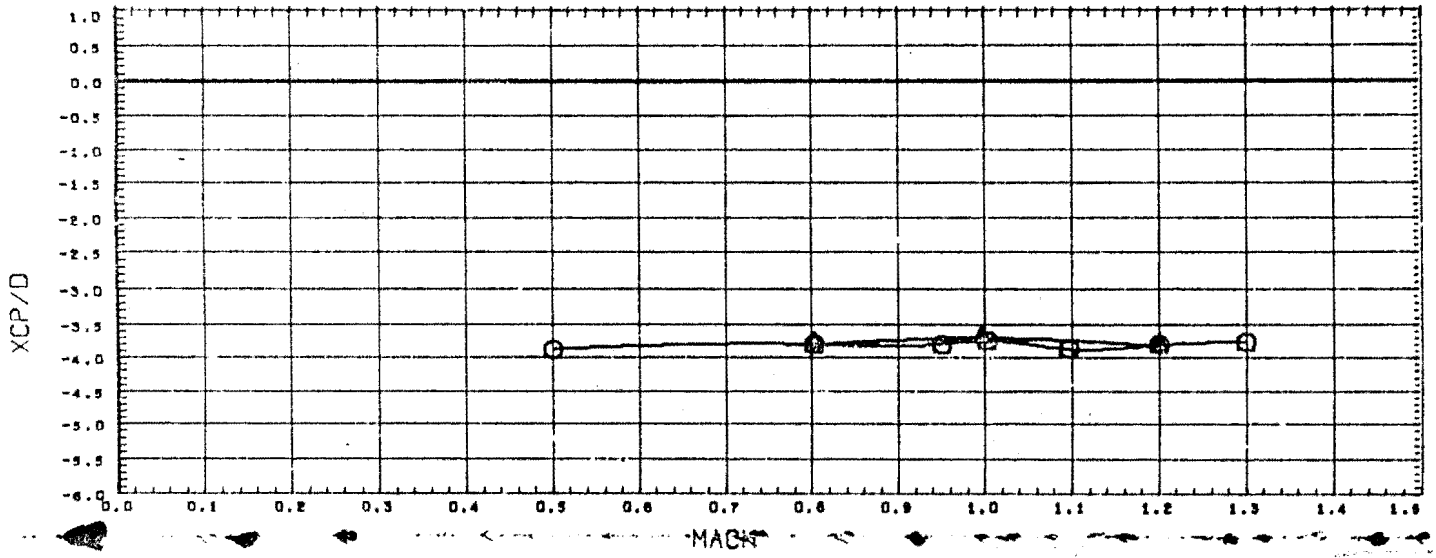
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(RTAR18)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	0.000	1.500	3.250
(RTAR19)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	45.000	1.500	3.250

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE



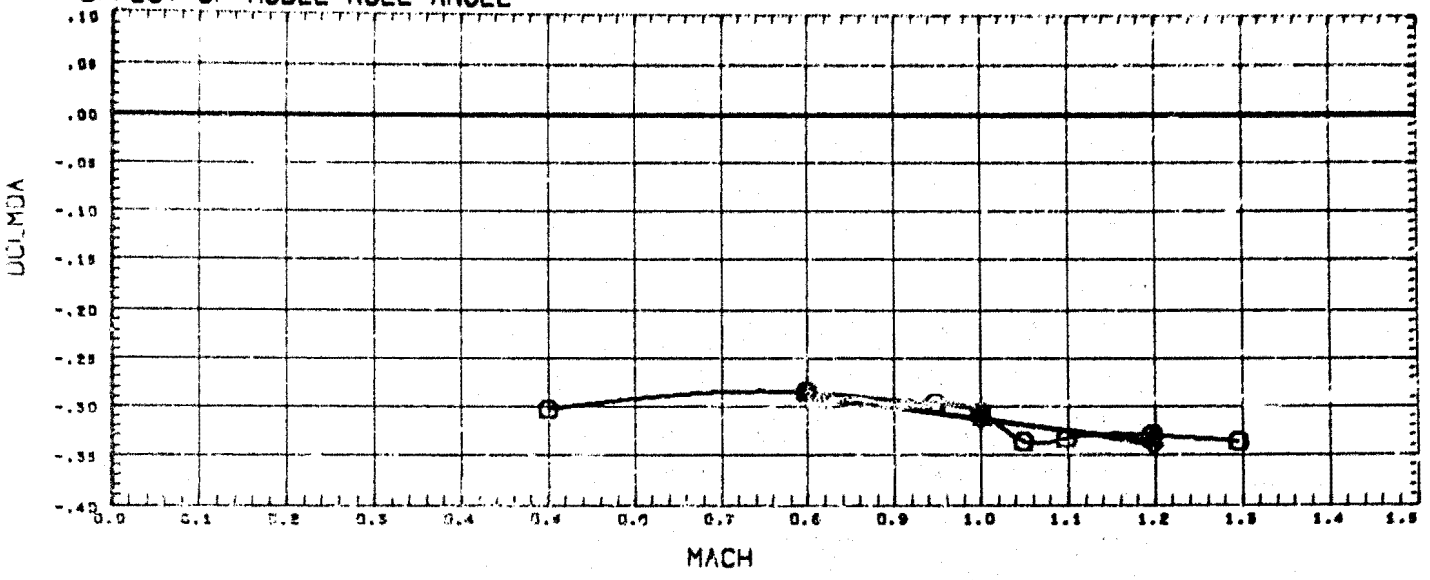


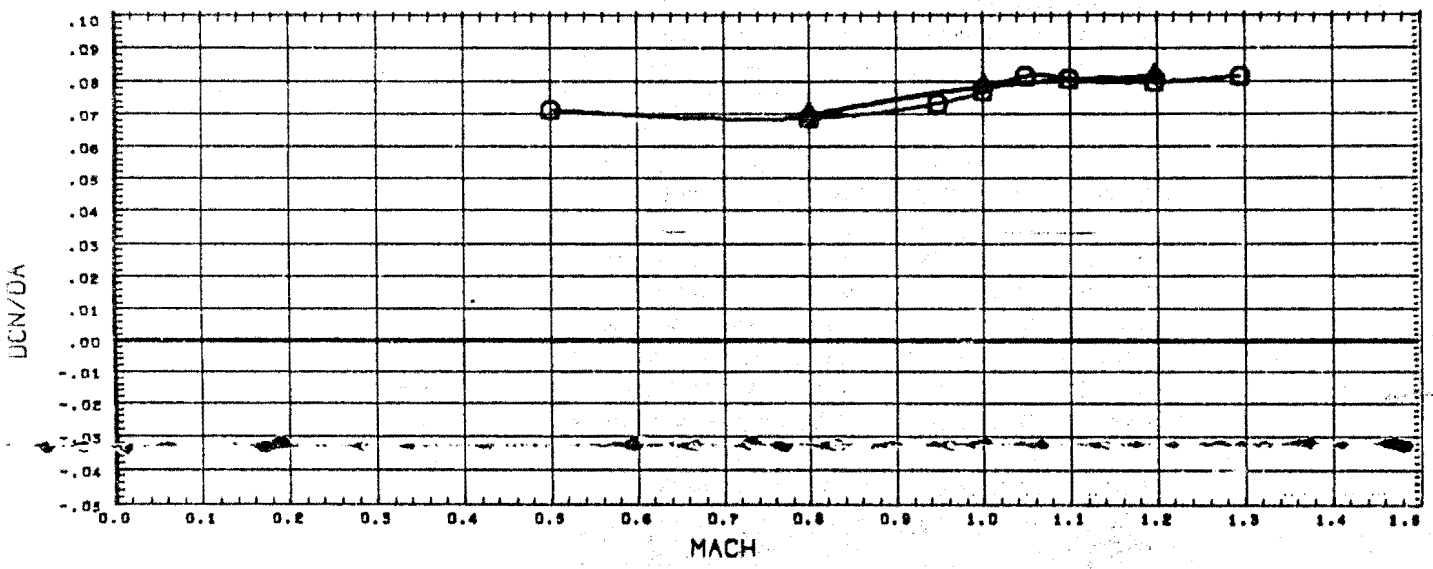
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(BTAR18)		AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	0.000	1.500	3.250
(BTAR19)		AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C2	45.000	1.500	3.250

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE

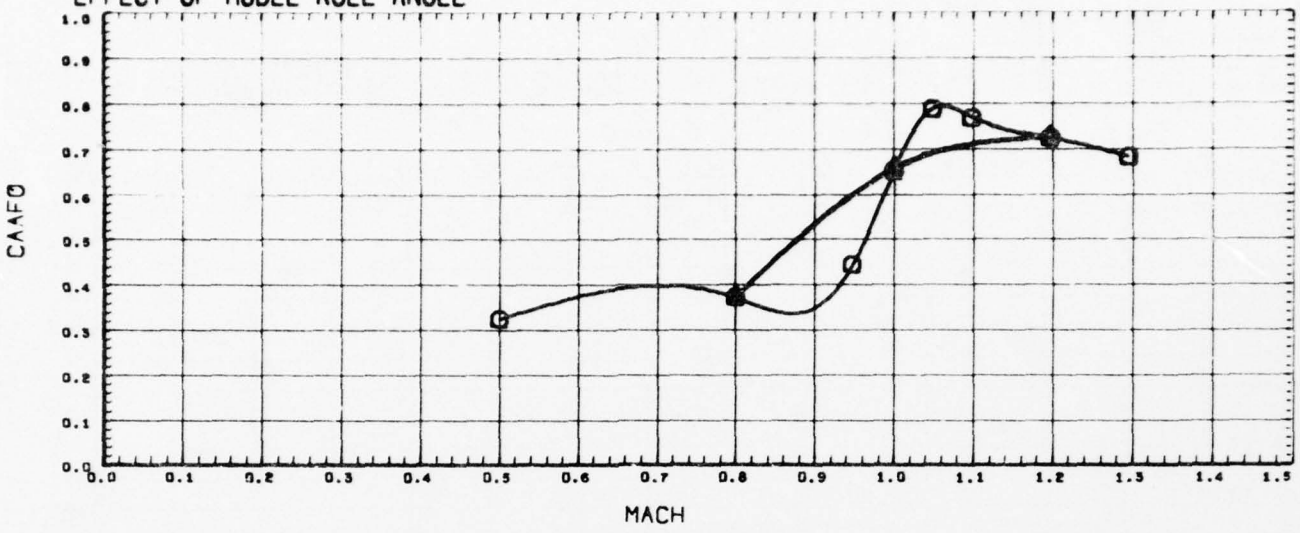


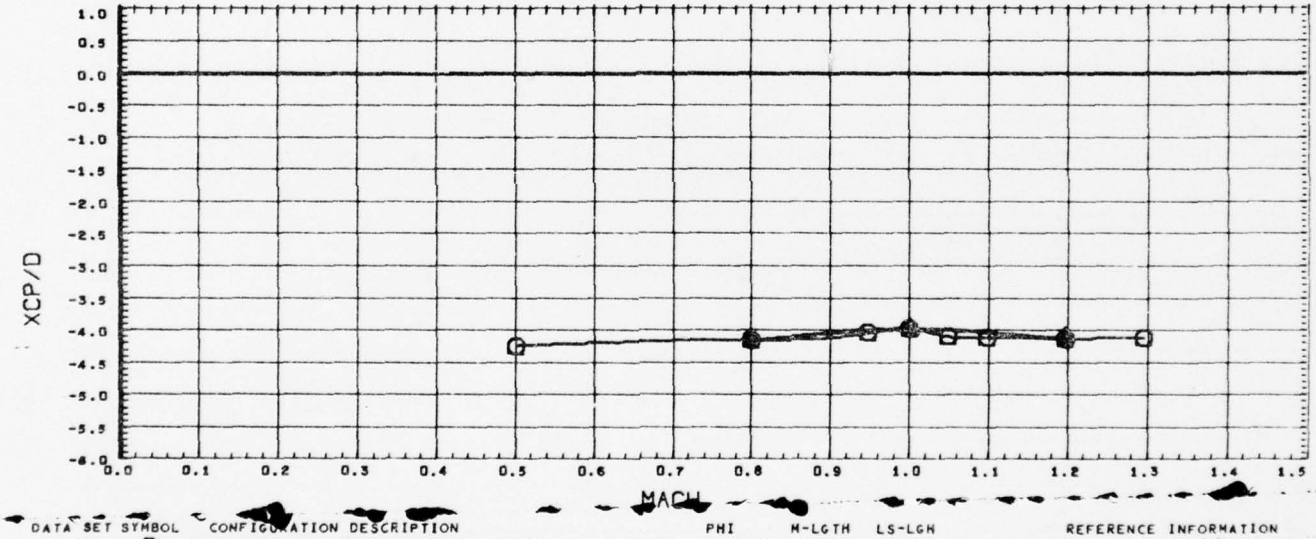


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(RTAR25)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	0.000	1.500	3.250
(RTAR26)	△	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	22.500	1.500	3.250
(RTAR27)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	45.000	1.500	3.250

REFERENCE INFORMATION		
SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE

EFFECT OF MODEL ROLL ANGLE





DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	M-LGTH	LS-LGH
(BTAR25)	○	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	0.000	1.500	3.250
(BTAR26)	☆	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	22.500	1.500	3.250
(BTAR27)	◇	AEDC TEST PWT-4T201 CONE-CYL. W/RING TAIL,N1R2C5	45.000	1.500	3.250

REFERENCE INFORMATION

SREF	7.0686	SQ.IN.
LREF	3.0000	INCHES
BREF	3.0000	INCHES
XMRP	0.0000	INCHES
YMRP	0.0000	INCHES
ZMRP	0.0000	INCHES
SCALE	0.0000	NONE